

small air forces observer

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December 2000

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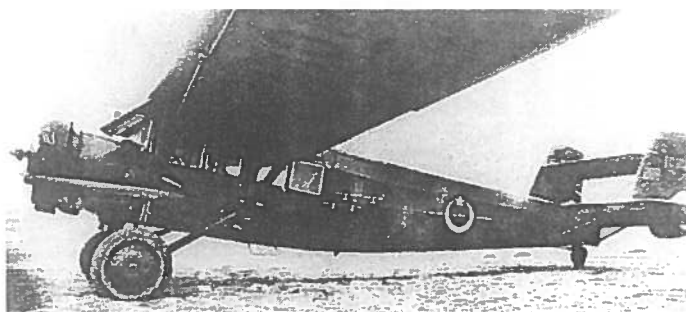
Air Transport Development in Turkey 1933-1947
Fine Foxes: The Renard Monoplane Fighters
Sukhoi Su-8 Twin-Engine Attack Plane
Latin American Air Combat (Part 3)
A French Pilot in the Ottoman Army
Romanian Hurricanes in Combat
Argentine Hawk IIIs

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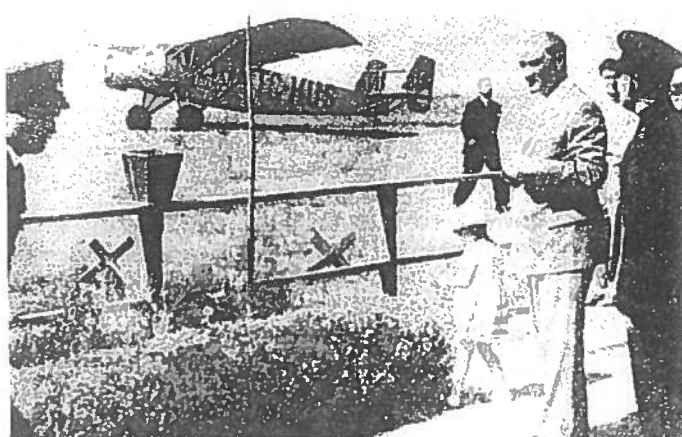
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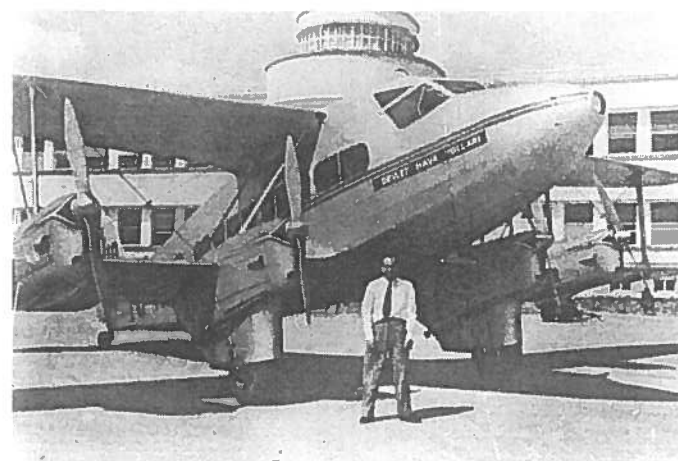
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SMALL AIR FORCES OBSERVER

The Newsletter of the Small Air Forces Clearing House

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SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching aviation history, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material. Article published in SAFO can be reprinted provided permission of the author is obtained and the SAFO is identified in the reprint.

SUBSCRIPTION RATE: Subscription to the current volume of the SAFO is \$14.00 via surface mail. For the cost of air mail delivery, contact the editorial office, or send \$22.00 and any surplus will be credited to your account. Payment should be made in cash, by International Money Order, or by a check drawn on a bank with a subsidiary in the US made payable to "Jim Sanders". New subscriptions begin with the next issue published after payment is received; if you desire otherwise, please specify which issues are desired. Send remittance to Jim Sanders, 27965 Berwick Dr., Carmel, CA 93923 USA.

BACK ISSUES: Either back issues or Xerox copies of out-of-print issues are available for all issues of the SAFO published at \$3.00 each. For a list of all issues and their content, send two 1st class stamps (or 2 IRCs) to the editorial office.

MEMBERSHIP LIST: To promote cooperation between members, a list of SAFO member's names and addresses is available to SAFCH members for \$1.00 plus postage (\$1.00 surface or \$2.00 air mail).

SPONSORSHIP PROGRAM: To keep the SAFCH truly international, our Sponsorship Pro-

gram allows persons who can not obtain US currency to receive the SAFO. Any SAFCH member interested in sponsoring a SAFO subscription for a person in Eastern Europe (or from other country where it is impossible or difficult to obtain US currency) should write to the editorial office for a list of persons seeking sponsors. If you would like to receive the SAFO but can not obtain US currency, a list of SAFCH members looking for someone to sponsor is also available from the editorial office.

INFORMATION FOR AUTHORS: Manuscripts may be submitted in any form; authors whose first language is not English may submit a rough translation of the text and the editorial office will put it into good English. Authors using a computer should send the manuscript on disc. Photo should be black and white prints although color prints can be used. If you want any photos returned, please mark "Return" on the back. All art work must be ready for printing. The layout should be such that when a page is reduced (if necessary) the drawing should fit into the 7.5 inch by 10 inch working area of the final page. Art work that does not fit this requirement will have to be cut and pasted to fit; no problem, but things might not look exactly as you want them to look. All work for the SAFO is voluntary and no payment can be made for published material.

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LOST MEMBERS: Anyone knowing the whereabouts of the following 'lost' SAFCH members please inform the editorial office (last known address included): Alain La Pierre, Maracay, Venezuela; Jaroslaw Kusmirek, Lubartow, Poland; Jean Paul Castella, Marseille, France. Josef Gotz, Usti nad Labem, Czech Republic. Egils Pelecis, Riga, Latvia. Charles Berecz, Dayton, Ohio. Terry Elmore, Everett, Washington.

SAFCH WEB SITE: See SAFO photos in color and chat with members at www.bartoli.com/safo

COVER COMMENTS: The cover photo of a New Zealand A-4K in the latest lo-viz camouflage was taken by John Bidwell of Christchurch and was sent to us by Nils Treichel of Germany. The scheme is

an all over Dark Green, Tamiya colour XF-61, and the only colour variation is the Gloss Black markings, nose, and aerial. On the wing, the kiwi national insignia appears on the upper post and lower starboard wings and is positioned with the feet facing forward. The NZ A-4K are NZ6201-NZ6203 and their TA-4K are NZ6251-NZ6252 and NZ6255. A 1/72-scale sheet of decals for these a/c is available from Flying Kiwis who can be contacted through Trevor Bringans Ltd., PO Box 76-156, Manukau City, New Zealand.

GUEST EDITORIAL: "Just a few months ago I was planning to write a letter suggesting that SAFCH members with a good knowledge of English and Spanish offer their service as translators of articles written by Spanish-speaking members with a poor knowledge of English. For years I have wished to help in the diffusion of Uruguayan aviation history in international publications such as the SAFO so that our history would be available to people outside of South America. But the English language is for me a barrier, my English is too poor, sufficient for reading and for writing basic letters, but insufficient for composing large texts. In five years I've only written about the Ro.37bis in Uruguay, an article that was published in SAFO in December 1996. This in spite of the fact that I have two historian friends who would be happy to collaborate by allowing SAFO to reprint translations of their articles published in 'Gaceta de la Aviacion' or 'Aeronoticias'. I suggest that fellow SAFCH members interested in this proposition offer to help other members to collaborating on translating articles and other data.

"To support the above proposal, I was planning to include 3-view drawings of Uruguayan F6F-5 A-453 which I first drew for 'Gaceta' and later published in IPMS-Uruguay's 'A Escala'. The author of the text that was to accompany this drawing is historian Nelson Acosta who offered his text for SAFO nearly 3 years ago, but I was never able to translate it into English. The drawings and the text were available for publication 3 years ago, but English was a barrier for us.

"Then, just at this time, SAFO #94 (July 2000) arrived with the article by Marcos Vinicius G. Teixeira on 'The Grumman Hellcat in Uruguay'. He did a good job in adapting my original drawing in a clearer presentation, but he made one mistake; the anchor on the lower surface should be in a position equivalent to the upper surface one. The propeller hub and the tip of auxiliary fuel tank are red. I don't understand the significance of the black object under the wing, no pylons were carried. The text is a good condensation of the work of Nelson Acosta. The original article was first published in 'Gaceta de la Aviacion' and was then reprinted in IPMS-Uruguay's 'A Escala' #4 April/June 1995 (which also included drawings of the uniforms used by ground crew and pilots by specialist Rafael del Pino).

"I am very happy that other people in other countries be able to use information from publications in other magazines, for this helps to the diffusion of our aviation history, but I think it is important to always mention the source and author. Mr. Acosta's hard work has been published until in an Argentine magazine without any mention of the source or author. IPMS-Brasil's only

mentioned the source and SAFO only mentioned IPMS Brasil, both forgetting the contribution of Mr. Acosta who collected all the original data and credited his sources. [Ed. My mistake, I missed the mention of IPMS-Uruguay.]

"I'm totally open to sending data for future drawings to Mr. Teixeira who does excellent work for IPMS Brasil. I am also willing to collaborate with SAFO for the greater diffusion of knowledge of South American aviation history, but don't forget to credit the sources of information."

Eduardo Luzardo (SAFCH #1383), Picardia M.267 S.37, 91001 Barros Blancos, Uruguay.

Photos via Eduardo Luzardo on page 143. Uruguayan T-34A FAU 645 Escuela Militar de Aeronautica, EMA Pando, 7 February 1999. (Julio Salvo). Bolivian T-34 FAB-902 (ex FAU 645). Santa Cruz, 18 July 2000. (FAB)

[Ed: The preceding letter brings up two points that I consider extremely important in helping the SAFCH expand its effort to promote international cooperation in researching aviation history and diffusing this knowledge to as large an audience as possible. The first is that there is a lot of people out there for whom English is a second language wanting to share information, but who are held back by the amount of work it takes to put their text into English. English-speaking SAFCH members with a working knowledge of another language could greatly help our cause by volunteering to translate articles for SAFCH members having information but reluctant to write in English. If you are willing to translate articles for SAFO, send me your name and I keep a list of translators that can be sent to members seeking help. A cadre of translators working in many languages would greatly increase the effective of the SAFCH.

The second point made in the following letter is one that I feel very strongly about. All material sub-

mitted to SAFO for publication should list the source of all information. Not only is this a courtesy to the original author or artist, it allows the reader to judge the validity of the information. To much false information has assumed validity through constant repetition of an incorrect fact.

The following letter expresses these point better than I can. I've corrected the English to clarify the thoughts; the original letter was written with much difficulty with the English language.]

SAFO INDEX: "The 95 issues of SAFO on my shelf constitute an invaluable modeling resource, but with each new issue it gets harder to find a particular aircraft type or nation. It occurred to me that if I entered the information I sought into a sortable spreadsheet and added each new issue to it, the problem would be solved. It occurred to me as well that other members might find such a thing useful. The enclosed diskette bears an Excel file named 'SAFOindx'; the result of my labors.

"This is NOT a full index; some other hardier soul will have to take that on someday. Rather, it is a list of images (drawings, photographs, whatever) which I felt (yes, very subjective) would be useful if I were modeling the aircraft depicted. Not in every case all you need to finish a model, but helpful visual information. Certainly, there are verbal descriptions elsewhere in some issues which would be useful; but that level of detail is beyond me at the moment. Simply reviewing each issue for pictures took several months of off-and-on effort, a few issues at a time.

"The file comprises three columns: aircraft type, nation and SAFO issue number. By manipulating the columns and then sorting you can do a lookup by any of the three criteria. I have tried to be consistent with aircraft designations and manufacturers' names. Numbers, not names except when the name is universally better known (who calls a Mosquito a D11 98?); no mark numbers or

suffix letters except where the appearance of the aircraft is very different (e.g., the M1G UTIs). Similarly, no license-built names (LIM for MG, etc.); well, OK, I did get lazy and let Westland keep the Sea King & Commando, but they do differ a bit from the Sikorsky originals after all.

"This list is not perfect. I do not know my helicopters or light aircraft that well; actually, anything outside the mid-30s to mid-50s era I can get a bit hazy on. I would welcome comments and corrections from you or any of the membership. Again, the file was originally organized for any personal use; should anyone wish to redo it in a different (a.k.a. 'better') way he is welcome to do so.

"If you wish, you may make this file available to the membership, in any way you choose: on the web site, via mail (e- or snail) or however. If you do, I hope some will find it useful. It has been rather enjoyable to review all SAFO issues over a (fairly) short span of time. It gives me a better appreciation for the growth (in all senses of the word) of the organization. It also refreshes my memories of some of the truly excellent research done by our members: the late Nick Waters with his 'MiG Mania' and Dan Hagedorn's 'Latin Valiants' to name just two of the very best."

Harold Kruitbosch (SAFCH #1079), 245 River Valley Road, Stratford, CT 06614, USA.

[Ed: Hal has done a fabulous job. This index, updated with each new issue, will be available on our web site. The current index can be obtained by sending a blank formatted 3.24-in. floppy disc and \$1.00 USA (\$2.00 others) for postage to the editorial office. A hard copy (40 pages) is available for \$5.00 plus postage; specify either sort by type or by country.]

TAILPIECE: More photos of the NZAF lo-vis Skyhawks.

-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A\$27; air mail A\$30). 3/00 (28 pages) "Pfalz Parasols" 3 pages including 2 side-view drawings. "Merlin Engined Seafires" (Part 1) 7 pages including a page of drawings showing changes to make to a Spitfire V kit and 6 side-view drawings. "Fairley Firefly" 16 pages including 13 side-view drawings (RN, Dutch, & Ethiopian), 2 photos of aircraft, and 14 photos of details. "Romanian 190" a 1/2-page side-view drawing. "Luftwaffe Machine Guns" one page including 1/12-scale drawings of MG15, MG17, MG81Z, & MG131.

AUSTRIA

OFH NACHRICHTEN (Oesterreichische Flugzeug Historiker, Pfenniggeldf. 18/2/14, A-1160 Wien. Write for free sample.)

3/00 (40 pages) "Oeffag Albatros D III bei der Jagdstaffel Galanestie" 5 pages including 4 photos and 2 side-view drawings. "Austrian Airlines Abschied vom A 310" 5 pages including 5 photos. "Flugunternehmung und Flugzeubau: Guritzer - van Nes" 8 pages including 8 photos (Klemm L 20 Hopfner IIV 3, and Guritzer/van Nes A2 & A 3). Photos: 5 Swedish and 2 Austrian Saab Draken.

BRAZIL

EM ESCALA (IPMS Brazil, Rua Lucidio Lago, 457/206 - Meier - Rio, RJ, CEP 20780-020. Subscription is \$10.00, but they prefer kits or accessories. Send to Antonio Pereira Linhares at the above address.)

#96 2000 (16 pages) "Lockheed 10 Electra" 3 pages including 3-view drawings of Amelia Earhart's 'NR16020' and VARIG 'PP-VAT'. "RAF Mustang III" one page with 2 photos of model of Hornaczewski's 'PK-G'.

ENGLAND

IPMS MAGAZINE (Ernie Lee, 51 Ball Road, Hillsborough, Sheffield, South Yorkshire S6 4LZ, 6 issues for £20.00.

4/2000 July/August 2000 (48 pages) "Jenson's Interceptor's" 3 pages on building Hasegawa's 1/48-scale Hurricane as 'UF-L' including 4 photos of model. "Hurricanes in the Battle of Britain" one page with 6 side-view drawings (including 'WX-V' of 302 Polish Squadron). "Big Blitz Bomber" 2 pages on building Italeri 1/72-scale He 111P including 2 photos of the model. "Heinkel He111 H & P" one page with 6 side-view drawings. "British Prototype Markings" 2 pages including sketches. 5/2000 September/October 2000 (48 pages) "Battle of Britain Spitfires" 3 pages including 7 photos of models and 7 side-view drawings. "Battle of

Britain 110s" 5 pages including 6 photos of model, a 1/72-scale 3-view drawings, and 6 side-view drawings. "RJAT-Cottesmore" 2 pages with 21 photos Hungarian MiG-29, Austrian Saab 105, Belgian Alpha Jet, Italian AMX, Swedish JA 37, Ukraine An 72, Swiss SA.33 Cougar, & Finnish Hornet). "Hunting High and Low" 4 pages on building the AeroClub 1/48 Jet Provost including 5 photos of the model and 3 photos of RAF a/c, and 4 side-view drawings. "RNZAF Strikemaster" 3 pages including 5 photos of the model and one photo of a RNZAF a/c.

PLASTIC KIT CONSTRUCTOR (PAMAG Publications Ltd., Riverdale, 89 Graham Road, Sheffield, S10 3GP; 4 issues £18.00. (North American subscription agent: Wise Owl Publications, 1926 S. Pacific Coast Highway, Suite 204, Redondo Beach, CA 90277. E-mail: wiseowl@sprintmail.com. Web Site: www.wiseowlmagazines.com).

#62 Autumn 2000 (36 pages) "Dyanavector's 1/48 Sea Hornet FAW.22" 3 pages including 24 photos of the model. "VEB's 1/72 Beriev Be-6" 6 pages including 4 photos of the model and 3 pages of sketches and scale drawings of corrections and modification to MAD version. [Ed: I wish I had this article when I built my Be-6 20 years ago.] "Messerschmitt Bf 109G-10" one page with 2 side-view drawings (318th Polish Sqdn. & 2nd Croatian Sqdn.). "An Introduction to Airliner Modelling" 2

pages with a table of airliner kits arranged by year. "Blohm und Voss Ha 140" 2-page 1/72-scale 3-view drawing. "Monospar Ambulance" 3 pages with a 2-page 1/72-scale 3-view drawings and instruction sheet for the Frog Penguin kit. "Spitfire Mk XII" 2 pages including 16 photos of the model. Revell's 1/48 B-1B Lancer" 3 pages including 8 photos of the model. "Academy's 1/48 Hunter" 2 pages including 11 photos of the model. "Handley Page 115" a one-page 1/72-scale 3-view drawing. Many more shorter reviews of kits.

21th CENTURY PLASTIC MODELLER, Vol. 1, No. 1. July/August 2000. PAMAG (Publications), Ltd, Riverdale, 89 Graham Road, Sheffield S10 3GP, England. £2.25. Annual subscription (6 issues) £16.50 overseas or £20.00 airmail. \$33 from Wise Owl (see above).

#2 September-October 2000 (56 pages) "Handley Page Hampden" 4 pages including 6 photos of the model, 6 photos of the aircraft, and a 1/72-scale multi-view drawing. "Tornado GR Mk.1" 4 pages on building the 1/32-scale Revell kit including 8 photos of the model. "SNJ-3 and AT-6A" one page with 3 side-view drawings. "Contrast Colour Schemes" 2 pages on building a Tiger-Striped Mystere and Delfin including 2 photos of the models and drawings of the color scheme for the L-29. "Raider C-125" 1-page 3-view drawing reprinted from a 1959 issue of Air Trails. "Modeling with a Mouse" a one page discussion of "Newsgroups", "Mailing Lists", and Web Sites". "Republic F-84F" a 2-page review of the 1/72-scale Airfix kit including 12 photos of the model. And, shorter reviews of 11 other kits.

SWEDISH AIRFORCE SIG (Ted Burnett, 19 Tintagel Close, Parkside Grange, Cramlington, Northumberland, England NE23 0NZ. Subscription £5.00 UK, £7.00 Europe, \$16.00 USA.

#35 Autumn 2000 (31 pages) "A Review of the Italeri Agusta Bell AB204B 1/72 Scale Kit" one page. "F 21 - the Norbotten Wing" 1-1/2 pages. "More on the Colours of the Gripen" 1/2 page. "The First Moth of the Air Force - SK7" 5 pages including a page of 1/72-scale drawings and a review of the Daedalus kit. "The MBV-2S Target Winch Pod" 6 pages including drawings of the modifications made to target-towing Tunnan & Lanssen and drawings the towed-targets Pilmal PM 7 and Ving-/Spannviddsmaal VM 4 & VM 6 (all interesting scratch-building projects). "J 20 Reggiane Re 2000 Falco" one page review of the Supermodel kit. "Lockheed C-130H TP 84, F/V 84003 (No. 834)" 3 pages including color chip and 2 pages of drawings. "Colours and Markings S35E Draken" 6 pages including a page of sketches and a 4-view scale drawing.

FINLAND

FINNISH AIR FORCE SIG, c/o Nils R. Treichel, Grosser Platz 4, 27432 Bremervoerde, Germany. Entirely in English.

No. 16 (10 pages) "Two Trainers" 2 pages on the Pyry (Blizzard) and Vihuri (Blast of Wind) including a 3-view drawing of the Pyry. "Red Flying Boat" 4 pages including 4 side-view (and one top-view) drawings of MBR-2 in Finnish markings. "Better than Nothing" one page on Finnish Blackburn Roc including a 2-view drawing.

SUOMEN ILMAILUHISTORIALLINEN LEHTI (InScale 72, Makelankatu 5B10, 00550 Helsinki; Europe \$30, elsewhere \$35; payment by International Postal Order or in cash; no cheques accepted because of high redemption rates). Each issue in-

cludes a 2-page English summary.

3/2000 (24 pages) "Fokker D.XXI: Sisaanvedettävällä laskutelineellä" 8 pages in D.21 with retractable landing gear including 7 photos and 3 pages of multi-view scale drawings. "Oiva Tuominen: Mannerheim-ristin ritari 6" 3 pages including 5 photos and 'victory' list. "Jami 65 vuotta" 2 pages on the 65th anniversary of the Finnish soaring center including 8 pre-WWII photos. "1E.20: Eusimmainen Caudron C.60" one page on the first C.60 delivered to the FinnAF including one photo.

FRANCE

AERO JOURNAL, Aero Editions, 50 bld Paul Valery, 32500 Fleurance, France. Sixteen-page English translation of the main articles (denoted below by titles in English). US\$ 40.00 including air mail for one year (6 issues). Visa and Mastercard accepted. E-mail: aerjournal@infonie.fr.

#15 Oct-Nov. 00 (72 pages) "Le transport francais 1939-1942" 15 pages including 24 photos (LeO H-213 & H-246; Farman 222 & 224; Dewoitine D.342; Wibault 283; Potez 540, 620, 650, & 662; Bloch 160 & 220; Farman 222; Amiot 143 & 354; and Caudron C.447) and 6 color side-view drawings (Potez 29, Farman 222, Potez 540, & Potez 650; almost all with Vichy stripes). [Ed. If you can identify all these a/c, your files on French a/c are better than mine.] "Transport Levant" 5 pages on a/c used to resupply French forces in Syria during the conflict with the British including 7 photos (Farman 222 & 223; Amiot 143; Lockheed 14; Dewoitine D.338; & Potez 650) and 3 color side-view drawings (Farman 222 & 223; and Dewoitine D.338). "Transport 39-45" 6 pages including 9 photos and 4 color side-view drawings (Hungarian Fiat G.12, Slovak He 111H, Romanian Ju 52/3m, RCAF Lockheed C-60A, Soviet C-47B, RAF Bristol Bombay, & Japanese Nakajima Ki.34 Thora). "Transport Luftwaffe" 7 pages including 9 photos and 7 color side-view drawings (He 111H; Ju 52/3m; Gotha Go 224; Me 323; SM S.81 & 82; and LeO 451). "Le chasseur francais" 2 pages with 13 color side-view drawings (Caudron C.714; Bloch 152 & 155; Dewoitine 376, 510, & 520; Koolhoven FK.58A; MS 406; Potez 631; Curtiss H-75A; CAO 200; Arsenal VG.33; and Bleriot-SPAD 510). "Les as de l'aviation: Capt. Shomo" 3 pages including 2 photos and 6 color side-view drawings (P-39Q & P-51D). "Massacre a Amsterdam" 5 pages including 5 photos and 2 side-view drawings (Lockheed Venture & FW 190A). "Le Cirque Skalski" 6 pages on the Polish Fighting Team in North Africa including 9 photos, victory list, and 4 color side-view drawings (Kittyhawk, Hurricane, & Spitfire). "L'attaque de Mongols ... Fiers!" 6 pages in the Japanese balloon attacks on the USA including photos, drawings, and maps. "Aircraft damaged by flak ... and bombs" 3 pages including 3 photos and 2 color side-view drawings (French Bostons). "La chasse francaise 1939-1945 (15): Le GC I/4 Navarre (2eme partie)" 4 pages including table of a/c, bases, victories, losses, etc.; 4 photos; and 5 color side-view drawings (Bell P-39N & Republic P-47D). Color 4-view drawing of Potez 25A2 in Indochina 1937 with a striped white/green color scheme and tiger-head insignia. [Ed. The English translation insert has 16 pages, but does not include a translation of the Skalski Circus article.]

AVIONS: Toute l'Aeronautique et son Histoire (LELA PRESSE, 29 rue Paul Bert, 62230 Outreau, France. 420F for 12 issues).

#91 Octobre 2000 (64 pages) "Retros du Mois" one page with 2 photos (Cuban Curtiss Hawk II and Danish Hawker Nimrod). "Robert Williams,

l'autre heros legendaire des Cigognes" 12 pages including 26 photos (Ni.62, D.510 & MS406). "Faux et usage de faux ... a la mode egyptienne" 11 pages including 14 photos and 9 color side-view drawings (Egyptian Gladiator, Hurricane, Sea Fury, Il-38, An-12, Tu-16, & Be-12; Iraqi Sea Fury; and Yemen Il-14). "Des Ryan aux triangles oranges" 9 pages on the Ryan STM-2 in the Dutch East Indies including 15 photos, a 2-page cutaway drawing, and 3 color side-view drawings. "Le campagne italienne de la Jagdgeschwader 77 (3): L'invasion de la Sicile (10 juillet - 17 aout 1943)" 9 pages including 20 photos. "Le Morane-Saulnier MS 350" 6 pages on this elegant little biplane including 13 photos, but no scale drawings. "Le Hanriot H.232 d'Azur au 1/72eme" 4 pages including 12 photos of the model. **#92 Novembre 2000** (64 pages) Color photos: Russian P-63. Color side-view drawing: Egyptian MiG-25. "Retros du Mois" with 2 photos of different MB.170s. "Les as belges 14/18: Jan Olieslagers" 9 pages including 20 photos (Bleriot XI and Nieuport X & XI), color cover painting (Nieuport XI), and 2 color side-view drawings (Hanriot HD-1). "Mohawk et Spitfire: les premiers monoplanes de chasse portugais" 8 pages including 14 photos and 9 color side-view drawings. "F-91, le baroudeur de chez Fairchild" 4 pages including 11 photos. "L'avion de record Wibault 368" 3 pages including 4 photos. "Des Ryan aux triangles oranges" (2eme partie) 9 pages including 15 photos, 2 pages of 1/72-scale drawings, and a page of color drawings. "Le Chetverikov Che-2 (MDR-6A)" 7 pages including 17 photos. "Le AAC.1 Toucan; Conversion de la maquette du Junkers Ju 52 au 1/48eme de Revell/Monogram" 4 pages including 11 photos of the model.

#93 Decembre 2000 (64 pages) "RAF contre Luftwaffe en 1941" 9 pages including 24 photos and 6 color side-view drawings (Bf 109 & Spitfires). "Le Caudron C.690" (1ere partie) 8 pages including 14 photos, 6 color side-view drawings, and a color cover painting. "Un grande trimoteur civil: le SIAI Marchetti S.73" 11 pages including 25 photos and 3 color side-view drawings (Belgian, Czech, & Italian). "Les as belges de 14/18(IV): Jan Olieslagers" (2eme partie) 5 pages including 14 photos. "F-91, le baroudeur de chez Fairchild" (2eme partie) 11 pages including 25 photos, 1/72-scale drawings, and 2 color side-view drawings (Japan & RAF). "Quand des Spitfire defendaient la neutralite du Portugal" 7 pages including 11 photos and 5 tables. "Un Bf 109G-10 'a la sauce italienne'; Maquette Revell au 1/72eme" 3 pages with 7 color photos of the model.

JETS: Toute l'Aeronautique Moderne (LELA PRESSE, 29 rue Paul Bert, 62230 Outreau, France. 420F for 12 issues).

#58 Octobre 2000 (54 pages) "Farnborough 2000" 3 pages including 7 photos (one Turkish Black Hawk). "L'Ecole de l'Aviation de Chasse de Tours" 6 pages including 13 photos (most French Alpha Jets but also a pair of Romanian MiG-21s). "Magic 58" 7 pages on NATO Sentry a/c including 10 photos. "Cougar pour le Bhema II" 6 pages on Spanish AS 532UL helicopters including 12 photos. "Le Probleme Aeronaval de la Marine du Brasil" 6 pages including 11 photos (A-4 Skyhawk, AS 350 Esquilo, Bell 206, Super Puma, Sikorsky S-61, & Super Lynx). "Dans la tanoere du Jaguar" 5 pages including 10 photos. "Koksijde 2000" 6 pages including 13 photos (Danish F-16 & S-61, Belgian F-16, Czech MiG-21 & L.39, and German & English Jaguars).

#59 Novembre 2000 (68 pages) Color photo: Belgian AF Airbus A 310 'CA-01'. "Flottille 36F" 4

pages including 9 photos of AS 565 Panther. "Des Mirage 2000 a Aviano" 4 pages including 9 photos of Greek Mirages. "Ravitaillement en vol" 8 pages including 20 photos of aerial-refuelling Transalls. "Le 3eme RHC d'ETAIN" 5 pages including 12 photos of French Gazelles. "La flottille 6F" 16 pages including 12 b&w photos (Catalina, Ventura, MB 175, & Avenger) and 25 color photos (Alize). "Volkel Open Dagen" 6 photos including 10 photos (Austrian Draken; Norwegian & Portuguese F-16; and Dutch AB-412, C-130, P-3, & F-16). "Air Power 2000" 7 pages including 22 photos (Austrian Saab 35 & 105, Turbo Porter, and AB-206; Finnish Hawk; Swedish Gripen; Hungarian Mi-24, Ukrainian Su-27; Czech Sokol & L-29; and Romanian Puma, Soim, & Lancer). "Alpha Jets pour la Thaïlande" 5 pages including 10 photos (but all a/c are still in German markings).

#60 Decembre 2000 (54 pages) "A bord de l'USS Kennedy" 7 pages including 14 photos. "La base de leeming et ses Aggressors" 7 pages including 10 photos. "Avro CF-100 Canuck" 7 pages including 21 photos. "Le grand show de l'armee de l'air" 7 pages including 14 photos. "La force aerienne de la Republique de Singapour" 8 pages including 19 photos (A-4, F-5E, RF-5E, SF-211, SF-260, F-16, C-130, Fokker 50, AS 332 Super Puma, AS 550 Fennec, AS 350 Ecureuil, & Boeing CH-47). "Maquette: Le Saab Draken" 5 pages including 6 photos of the model and 16 close-up photos of the aircraft.

GERMANY

MITTEILUNGEN (IPMS Germany, Bergengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan, DM 75.00 Australia).

5-2000 (40 pages) "Feldwebel Bachmann's Bf 109G-6" 6 pages including 8 photo and a 3-view drawing.

ITALY

AERO FAN Storia di Italiane. Side-by-side Italian-English text. (Editore Apostolo Editore, Via Ampere 49, 20131 Milano, Italy.) 4 issues L 80,000.

#73 Apr.-Giu. 2000 (68 pages) "MB 326 in the USA" 10 pages including 12 photos. "The Lightweight Fighter Illusion: SAI-Ambrosini's proposals 1940-1943" (Part II) 21 pages including 16 photos, 2 'blue-print' drawings, and 4 color side-view drawings (SAI 107, 207, & 403). "Going East Step by Step: Macchi C.200s of 373^o Squadriglia from Italy to Russia" 11 pages including 15 photos and one map. "The Bulgarian Kaproni Aircraft" (Part 2) 14 pages including 18 photos (KB-4, -5, -309, & -11), one 3-view drawing (KB-11), and 4 color side-view drawings (KB-11 Bulgarian & Yugoslav).

#74 Lug.-Set. 2000 (68 pages) "The Twin-Engined IMAM Ro 57" 19 pages including 21 photos, 1/72- and 1/48-scale 3-view drawings, and one color side-view drawing. "The SISA School: Activity at Portofino Base 1926-1931" 14 pages including 15 photos (FAB, Cant 7 & 12, and Macchi M7). "SM 75: 12,935 kms in a Closed Circuit" 8 pages including 4 photos of 'I-TALO'. "Three Years with ALAX: The Activities of the Italian Charter Company 1947-1949" 11 pages including 15 photos (Macchi MB 308, Avia LM 5, Fairchild FW24, NA Navion, & Republic Seabee). "L'Album di

Acrofan" one page with 2 color photos of restored Avia FL 3. "Re 2002 at Limoges" 5 pages on Luftwaffe RE 2002 shot down by French Maquis including 4 b&w and 4 color photos.

JP-4 (JP-4, CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere).

#8 Agosto 2000 (100 pages) Color photos: Egypt Mi-17, Burkina Faso Mi-8 'XT-MAU', Bahrain F-16C '012', Spanish EF-18 '15-25', KFOR AH-64D, and Mali Turbo C-47 'TZ-390'. "L'Aviazione della Armada" 4 pages including 12 photos (Super Etendard, Turbo Tracker, Stearman PT-17, ASH-3H, AS.355 Fennec, MB.326 Xavante, T-34C, & PC-6). "Riorganizzazione per la FAM" 6 pages including 19 photos (T-33; F-5E & F-5F; Bell 205, 206, & 212; Maule Rocket; C-130A; Arava; Mi-8; PT-17; MD.530; Schweizer SA-2; SF.260; Sikorsky S-70; and PC-7).

#9 Settembre 2000 (100 pages) Color photos: Ivory Coast Fokker F.100 'TU-VAA' and Togo Fokker F.28 'SV-TAI'. "Vista a Tbilisi" 4 pages including 10 photos of Georgian AF (Su-25, Mi-8, Yak-52, & L-29). [Ed: I was surprised to read that the Su-25 has been exported to 48 countries - 12 in Europe, 20 in Asia, and 16 in Africa. Does anyone have enough information to do an article on the Su-25 for SAFO?] "Piaggio Sudafricani" one page including 4 photos (P.166 & AM-3C).

#10 Ottobre 2000 (100 pages) Color photos: Venezuelan C-212, Burkina Faso HS.748 'XT-MAL' and Nord 262 'XT-MAK'. "Irish Air Corp" 4 pages including 9 photos (King Air, Dauphin, SF.260, Cessna FR.172, Fouga Magister, & CN.235). "Kleeblatt" 4 pages on Austrian Helicopter team including 9 photos. "Volant Rodeo Europeo" 4 pages including 7 photos (Dutch & Norwegian C-130, Turkish Transall, Italian G.222, and Spanish CN-235).

NETHERLANDS

MODELBOUW IN PLASTIC (IPMS-Nederland, PO Box 40082, NL-8016 DB Zwolle). Now with English captions and summary.

3/2000 (28 pages) "KLu demoversies van de Northrop NF-5A" 14 pages on Dutch demonstration team NF-5As including 24 photos and drawings for 5 different color schemes.

SPAIN

REVISTA ESPANOLA DE HISTORIA MILITAR (Carlos Fresno Crespo, Alcaniz Fresno's S.A., C/Cromo 18-20, Poligono Industrial San Cristobal, 47012 Valladolid) 800 Pts.

#5 Septiembre-Octubre 2000 (64 pages) "Vitoriam Septiembre de 1936" 8 pages including 7 photos and one color side-view drawing of He 51A. "Obus 'Plaswncia' de 21 cms" 8 pages including 10 photos and 2 color drawing of 21-cm howitzer. "La pieza antiaerea de 75/27 C.K. sobre camion 'Ceirano'" 2 pages including 3 photos and color drawing of mobile antiaircraft gun. "La Crucero 'Navarra'" 16 pages including 11 photos and 2 color side-view drawings. "La caza en los primeros mese de la paz (1^a parte)" 7 pages including 13 photos, a color painting of a CR 32, 5 color side-view drawings (4 CR 32 and one Vultee). "Material aleman para el Ministerio del Aire" 7 pages including 7 photos, and 2 color side-view drawings (post-war

Mc 109F-4 & Ju 88A-4).

USA

WWI AERO (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$30.00 USA or \$30 overseas).

#170 Nov 2000 (148 pages) "The Stein Monoplane" 4 pages including 2 pages of drawings. "Rumpler Taube 'Start'" 2 pages on the Norwegian a/c with a 3-view drawing and 4 photos. "Nieuport 17/23 Fighters in Russian Skies" 10 pages including 16 photos. "Russian WWI Flyingboats - Grigorovich M-5, M-9, & M-24" (Part 1) 16 pages including 9 pages of 1/48-scale drawings of the M-5 and M-9. "Cockpits / Instruments" 8 pages. "Drawings" Hansa-Brandenburg Biplane; Hell's Angles 'Avro 504' & Gotha; Nieuport Bi-motor; and Caudron R4. "Voisin 4-Motored Triplane" 5 pages including 3 photos and drawings. "Time's Tarmac" 5 pages, "Film" 3 pages, "Gallery" 3 pages, "Models" 7 pages, "Historiography" one page, "Letters" 4 pages, "Publications" 14 pages.

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$30.00 USA or \$30.00 overseas.).

#56 Oct. 2000 (84 pages) "Anacostia Flight Tests: Martin XP2M-1 Patrol Bomber Flying Boat" 7 pages including 7 photos. "Details: Martin XP2M-1 Three-Engine Patrol Bomber Flying Boat" 8 pages with 24 photos. "Biplane into Monoplane: Sikorsky's Universal Wing" 7 pages including 10 photos and a 3-view drawing of the JN-4 monoplane. "Thomas Crowder and his P-12" 3 pages including 5 photos. "Oshkosh 2000" 7 pages including 15 photos. "Airline Flying in 1931 - a Re-Creation" 9 pages including 12 photos and a 3-view drawing of the Stinson Model T. "The Jackson O-2" 3 pages including 5 photos. "Pilot Flight Test Report: 1931 Brunner Winkle Bird CK" 3 pages including one photo. "Southampton Adventures" 5 pages on a RAAF flyingboat's flight around Australia including 6 photos. [Ed: A map would have really helped. I tried to follow the flight with an atlas, but couldn't figure out how they got from the York Peninsula to Perth in the space between paragraphs.] "Cockpits: Martin XP2M-1 Three-Engine Patrol Bomber Flying Boat" 3 pages with 5 photos.

ESM 72 (Model-Aire International, PO Box 159, Olema, CA 94950. E-mail: maiesm72@aol.com. Web site: members.aol/Maiesm721/maiwebpg.html.) Quarterly. \$25.00 for four-issue volume. \$30.00 outside the USA. Back issues available at same price per volume.

Vol 4, No 4, (68 pages) "Aircraft" 14 pages Tachikawa to Zlin. "Aircraft Updates: ESM 72 Volume 1 and Volume 2" 10 pages. "Vehicles" 14 pages Hungary to Great Britain. "Aircraft Canopies and Turrets" 11 pages. "Ships and Boats Updates", "Rockets, Missiles and Spacecraft Updates", "Artillery Updates, Vehicle Conversions Updates", "Vehicle Parts and Accessories Updates", "Figures Updates", "Structures Updates", "Terrain and Dioramas Updates", "Railway Locomotives and Rolling Stock Updates", "Aircraft Conversions Updates" (14 pages for all updates).

Early Air Transportation Development in Turkey(1)

The first fifteen years, 1933-1947

David C. Montgomery(2)

Initial Aviation in the Ottoman Turkish Empire

As early as 1909, European aeronauts were demonstrating their skills and wares in Turkey. During May and June of that year, the French aeronaut Barbot flew with his balloon over Istanbul. On these flights he took along some Ottoman officers and even members of the Ottoman imperial family. In December of the same year, Baron de-Caters, on his way to Egypt, performed two demonstration flights over Istanbul with his Voisin aircraft. Very soon afterward, Louis Bleriot, who had earlier gained fame for his flight across the English Channel, arrived in Istanbul. However, his demonstration flight ended in near disaster with a crash which placed Bleriot in a hospital.

The Ottoman government established an Air Force in 1912 with a small number of French and later British trained aviators and purchased French, British and, by 1914, American built aircraft. Additionally, an observation balloon unit was formed. Reconnaissance flights were flown in the Balkan Wars, 1912-1913. A prestige flight with two-seat Bleriot 11s was made from Istanbul across Asia Minor and through Syria to Egypt in early 1914.

During World War One, the Ottoman alliance with the Central Powers brought a variety of German equipment. Some Ottoman pilots trained in Germany and Austria. Ottoman air units were active against Russia in the Black Sea basin and the Caucasus, and against the British in Iraq (Mesopotamia), Thrace, the Straits (Dardanelles), the Aegean and along the Mediterranean coasts of Asia Minor (Turkey) and Syria/Palestine to the Sinai peninsula and into western Arabia (the Hejaz). All Turkish units had some German fliers and technicians in their ranks. A small number of independent German air units (the "Pasha" units, Fliegerabteilung 300-305) operated parallel to the Turks in Syria and Palestine. During the war a cadre of Turkish pilots, crews and technicians gained valuable experience for the future.(3)

Aviation in early Republican Turkey

In 1923, after a bitter conflict with Allied-supported Greece in western Asia Minor, the new Republic of Turkey developed an air arm equipped with surplus World War One aircraft which had been either abandoned at the war's end by the European powers or purchased in the illegal arms market. French-built Breguet Br.14 recon-bombers and SPAD.13 fighters, as well as a variety of German, Italian and British equipment were used. Turkish student pilots were sent for training to Europe, particularly to France and Italy. The fledgling THK initially concentrated on fighter and recon/bomber aircraft for frontier defense and internal counter-insurgency action against radical Muslim groups and Kurdish separatists.(4)

The president Mustafa Kemal (to become known as Ataturk), 1923-1938, was a supporter of aviation as part of his modernization policies.(5) However, because the early Turkish Republic was not immediately fully accepted by the former Allies and had limitations placed on its military equip-

ment close links with Germany were continued.(6) Turkish military aviation activities were little publicized either within or without the country.(7) Experienced Turkish pilots used their previous wartime connections for gaining access to the semi-clandestine German aircraft plants in Denmark, Holland, Sweden and the Soviet Union. The Junkers firm had initial close relations with Turkey. Starting in 1924 twenty German-built single-engine Junkers F.13s(8) and two three-engine Junkers G.24s were acquired for staff and VIP transports.(9) The following year an agreement was made with the German firm Junkers to build an aviation factory at Kayseri in the interior.(10)

In 1927 diplomatic, boundary and financial understanding had been reached with the Western states. By the mid-1920s, normal attrition, lack of spare parts and operations for internal pacification had depleted the stocks of obsolete wartime aircraft and created a need for new equipment. French, British, Polish, Czech and American firms increasingly vied for the growing Turkish aviation business. The French initially had extensive aviation relations with Turkey. French instructors set up flying and mechanical schools. Lesser quantities of aircraft products were purchased from Poland and Czechoslovakia.(11)

Early Turkish-American aviation relations

Early in 1929, a Turkish economic mission went to the United States. Among its several tasks were studying American aviation and making recommendations for the purchase of American equipment. As a result of negotiations, during the following months the Turkish-American Investment Corporation was formed, and at the end of June, 1930 the Republic of Turkey obtained its first foreign loan: \$10,000,000 in return for a portion of the income from the government's match monopoly.(12)

Apparently in anticipation of the loan, the Curtiss Corporation of the United States aggressively sought a share of the potential Turkish market. Already in May of 1930, a product-demonstration team of the Curtiss-Wright Export Company was in Europe for a three month tour. The second stop was Turkey, where, in addition to aerial displays for the military market, the feasibility of a two hour Istanbul-Ankara flight was shown in contrast to a sixteen hour train passage.(13) The CWEC visit would soon bear fruit.

Airline development

The Turkish government increasingly looked on scheduled air transportation as a means to facilitate travel by diplomats, government officials and businessmen. The railroad system was limited, and roads were primitive. The few transport aircraft in the Air Force inventory were insufficient to growing needs. Ataturk's modernization program demanded improved communications within the country. Though foreign airlines flew to land and seaplane facilities near Istanbul, overflights were prohibited into, or across, the interior, large parts of which were designated as military

zones.(14) Demonstrations of foreign aircraft generally were held near Istanbul or at Izmir on the central Aegean coast.

The State Airlines (Devlet Hava Yollari = DHY) was founded officially on May 20, 1933 by Law Number 2186.(15) The airline was administratively linked to the Ministry of National Defense through the Under-Secretary of Aviation.(16) The first director was the experienced flier Fesa Evrensev, who was called out of military retirement.(17) Other airline pilots were "seconded" active-duty Air Force officers, who soon would be able to acquire multi-engine experience which at the time military equipment could seldom provide. In 1933, the DHY was a small undertaking. The twenty-four personnel included seven pilots, one radio operator, eight mechanics, seven clerks and one administrator. The Turkish government financed the airline. The first funding for the DHY was 180,000 Turkish lira, approximately \$70,000.(18) This amount apparently did not include major capital equipment such as aircraft, which were in the military inventory.

The initial airline fleet consisted of five aircraft: two German-built, one Soviet-built and two-American built, which would be the only equipment for the next two years. All were used aircraft. Two of the Junkers F.13s, acquired in the mid-twenties for the Air Force were allocated to the DHY. During 1933, a trio of twin-engined Tupolev ANT-9/M-16 transports were given by the Soviet Union to Turkey in commemoration of the tenth anniversary of the Turkish Republic. One Tupolev was assigned to the airline, but saw little use; the Tupolevs were retained by the Air Force and Air League for parachute training.(19) The aggressive international marketing of Curtiss-Wright in the 1931-1932 period is shown by the first purchased DHY equipment - two CW.55 Kingbird twin-engined light transports. These aircraft had been bought the previous year and shipped to Istanbul by early 1933, where they were assembled, then flown via Eskishehir to Ankara on February 3.(20)

The Kingbird purchase was part of a larger aircraft sales contract between Curtiss and Turkey. Twenty-four Curtiss Hawk 2 fighters, and six Fledgling trainers also were purchased. These thirty aircraft were disassembled, crated and then shipped by sea to Istanbul, where they were former Junkers plant.(21)

The new DHY had limited routes and schedules. Initially the flights between Istanbul and Ankara were via way of Eskishehir, an important military aviation center located midway between the old and new Turkish capitals. Each leg of the trip took about one and a quarter hours. The air route over most portions followed the railroad, near which emergency fields were designated. The round trip flights were made thrice weekly on Mondays, Wednesdays and Saturdays. To attract civilian passengers, the fares were approximately that of an overnight sleeper train. Each passenger was insured for 10,000 lira (approximately \$4,000).(22) Scheduled service was only in daytime during the summer. For the five available aircraft the total seats numbered only twenty-eight.(23) During 1934 and 1935 the DHY operated on a minimal basis. In 1934, 158 passengers were carried with 100,000 flight kilometers. In 1935, 273 passengers were carried with 172,000 flight kilometers.(24) Seemingly, the first two years of operation were more to prove the feasibility for scheduled airline service than to operate a commercial and civilian type airline. These provisional operations were successful.(25)

A major expansion and reequipping of the DHY occurred in 1936. The government's five year plan for developing industry announced early in 1934 had included aviation. The British DeHavilland Company with its emerging line of airliners superseded the initial American Curtiss position. One DH.84 Dragon Moth twin-engine six-passenger biplane transport was purchased in 1935. Successful experience with the DH.84 led to purchasing three twin-engined, six-passenger DH.89 Dragon Rapide biplanes and three four-engined, ten-passenger DH.86 Dragon Express biplanes. The previous Junkers, Tupolev and Curtiss aircraft were taken from airline service by the end of 1935. The DeHavilland aircraft apparently were the first newly built equipment. Thus, the DHY fleet in 1936 consisted of eight new-built aircraft with sixty-four available seats.(26) These various DeHavillands would constitute the entire DHY fleet until 1943.

Continuing development

The apparent success during the initial two years of DHY operation not only resulted in purchasing the new equipment, but also in a reorganization within the Turkish government. In May, 1935 the airline was placed into the Ministry of Public Works (Nafia Vekaleti), headed by Ali Chetinkaya, who also oversaw railway and shipping activities. Despite having been transferred to a civilian branch of the government, the Turkish Air Force continued to be the only source for pilots. In part, because the TAF provided the only opportunities for training on higher performance aircraft, and also because the DHY fleet could provide multi-engine experience which was minimally available on its own equipment.(27)

Route expansion followed during the following three years, 1935-1938.(28) From an initial single Ankara-Istanbul link, service was extended westward to Izmir (via Afyon) on the Aegean, southward to Antalya (via Konya) and Adana on the Mediterranean and eastward through the mountainous plateau to Kayseri, Sivas, Erzerum, Elazig, Diyarbakir and Van. Air routes continued to parallel railways, in part because of safety concerns, but also because the railways went through the lower passes of the rugged mountains surrounding the Anatolian plateau. A system of signal lights, telegraph, telephone and radio links improved travel and coordination. The DHY rarely operated during the winter and always flew very conservatively even in good conditions.(29) The DHY did not fly beyond Turkey's borders; foreign flight connections were made at Istanbul.

Equipment modernization and route extension is reflected in the quantities of passengers, freight carried and distances flown (30):

	passengers	cargo (kg)	distance (km)
1935	273	1,208	172,000
1936	1,124	6,813	204,000
1937	609	6,900	210,000
1938	879	8,984	128,347
1939	2,877	12,798	not available
1940	739	13,927	136,270

The gradual increase in cargo weights reflects the shipment of newspapers to all parts of the country. The airline was a means not only for moving people, but also for moving information. Receiving current newspapers from Istanbul and Ankara was important for building a base of support among the growing number of the modernizing and secularizing

literate population in the provincial centers. The rapid rise in passengers during 1939 reflects, no doubt, increased travel by diplomats and officials as World War Two was beginning. Likewise, the decline in distances flown would suggest a reallocation of scarce imported aviation fuel to military purposes. (See note on bomber acquisition, #27.) The number of personnel employed by the Turkish State Airlines also increased during the last half of the 1930s (31):

	pilots	radio operators	mechanics	clerks	workers	total
1935	6	1	7	12		26
1936	6	6	12	29		53
1937	8	10	15	27		60
1938	13	21	30	81	17	162
1939	16	24	26	76	27	169
1940	9	22	23	72	21s	147

The number of pilots doubled from eight in 1937 to sixteen in 1939 and then fell to nine in 1940. Apparently, additional multi-engine qualified pilots were needed by the Turkish Air Force to crew the growing number of twin-engine aircraft being acquired by the military. (Again, see note #27.)(32)

Turkish air transport during World War Two

During World War Two, neutrality was maintained by Turkey. All aspects of aviation experienced shortages of spare parts for the variety of foreign built aircraft.(33) Aviation fuel was limited. However, basic maintenance was within the Turkish capabilities. Both Germany and Britain courted neutral Turkey with its strategic position at the juncture of Europe and the Near East and supplied spare parts as much as possible. Additionally, Turkey was a source for chromium, cotton and food stuffs.

Air traffic between Istanbul and Ankara increased greatly, contributing to an overall rise in figures for the TDHY (34).

	passengers	cargo (kg)	distance (km)
1941	2,189	5,710	177,060
1942	5,481	16,851	358,300
1943	5,691	43,230	365,920
1944	14,249	115,810	615,058
1945	18,221	126,490	718,073

The airline's personnel more than doubled during the course of the war in response to growing demands on its services (35)

	pilots	radio operators	mechanics	clerks	workers	total
1941	12	21	28	52	42	155
1942	12	20	26	40	64	162
1943	18	30	32	65	56	201
1944	17	28	39	46	182	312
1945	18	36	48	46	242	390

As War World War Two progressed, neutral Turkey, with over one million men mobilized for service, was hard pressed to maintain both its military and civilian aviation establishments. Germany and England supplied limited numbers of military aircraft and spare parts.(36)

The TDHY continued to operate its now six and seven year old eight DeHavilland transports, safely, however, without any serious accidents or losses. The DeHavilland fleet received a significant augmentation in 1943 with the addition

of six DeHavilland Domine transports, military versions of the DH.89 Dragon Rapide.(37) Though these six-seat Domines brought the carrying capacity of the TDHY to one-hundred seats, the aircraft were already somewhat worn veterans of the British Middle East campaigns, and more likely may have been cannibalized for spares to keep the Dragon Rapides in operation. The Domines, however, remained on the formal inventory of the TDHY through 1946 and were more likely used for air freight rather than passenger carrying.(38)

A more significant increase in carrying capacity for the TDHY came in early 1944 with the acquisition of five newly built civilian airline furnished Junkers Ju.52 three-engine transports. Germany at the time was hard pressed for aircraft to reequip its military air transport fleet which had been heavily depleted during the disastrous 1943 North African and Russian campaigns. However, German dependence on Turkish chromium had led to the reluctant agreement.(39) The seventeen-passenger Junkers transports were delivered in early 1944 and were the first new equipment for the TDHY since 1936; they served in Turkey through 1947 and increased the potential TDHY passenger load to 185.(40,41)

Financial aspects of the Turkish State Air Ways

The TDHY was a government owned and operated airline. It was not intended to turn a profit, but rather to improve administration, rapidly move important materials and provide multi-engine training for Turkish Air Force pilots and crews. The wide disparity between the state provided expenses and net income (safi gelir) from passengers and cargo is shown below (42,43):

	expenses (TL)	income (TL)
1933	180,000	7,549
1934	180,859	3,052
1935	850,000	6,308
1936	998,000	4,075
1937	287,206	34,075
1938	544,511	29,745
1939	508,944	70,329
1940	1,111,634	13,156
1941	511,977	37,574
1942	796,758	155,486
1943	3,450,398	257,358
1944	2,712,877	528,435
1945	1,195,190	621,801

Three periods of high expenses stand out: 1935-1936, when 1,848,000 Turkish liras were expended, corresponding to initially starting up the airline and purchasing the DeHavilland transports; 1940, when 1,111,634 TL were spent, possibly in purchasing spare parts, aviation gasoline and other necessities as the Second World War was breaking out; 1943, when 3,450,398 TL were spent for other items, including the five Junkers Ju.52 transports.(44)

The immediate post-War period

The end of World War Two significantly altered the operations and equipment of the DHY. In 1946, thirty-three American-built Douglas C-47 transports versions were obtained by Turkey.(45) Ex-military craft, these did not begin to enter airline service until 1947, in which year the DeHavilland and Junkers transports were taken out of duty. The thirty-three aircraft of the DHY on paper made it the largest airline in the Middle East. However, all the C-47/DC-3s were not put

into full service till 1950. The aircraft were gradually renovated and brought up to airline standards at the Etimesgut facility of the Turkish Air Force near Ankara. (46,47)

In 1946 three women employees of the DHY began training as stewardesses ("hostesler", +ler = plural ending). (48) Five more women became entered the stewardess service in 1948 began to make scheduled flights to Athens, the first foreign flight for the Turkish Airways. (49,50)

Turkish civilian and military aviation development since 1947 became closely linked to the United States, which assumed a protecting role during the Cold War. Increasing numbers of American personnel, equipment and airbases appeared in Turkey. The Turkish Airlines significantly improved its services to include daily and year round schedules as American funding became available. (51,52)

Concluding thoughts

The Republic of Turkey, under the presidencies of Mustafa Kemal (1923-1938), and then Ismet Inonu (1938-1950), in the early difficult decades of its existence, with limited internal resources and a wide range of modernization needs, while building a state had shown the foresight and determination to acquire, master and utilize aviation, one of the most sig-

nificant technological developments of the twentieth century.

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Photo Captions (Photos on pages 110 and 143) All photos via the author.

- a. Fesa Eurensev, 1878-1951. First director of the TDHY, 1933. (Albayrak, DBTHY)
- b. Curtiss-Wright Kingbird. Turkish State Air Lines, ca. 1983. (Albayrak, DBTHY).
- c. Mustafa Kamal Atatürk meeting Curtiss-Wright 'TC-KUS' at Ankara, ca. 1934. (From Turkish Air League archives)
- d. Junkers G.24. (Junkers' sales brochure, ca. 1928)
- e. Tupolev ANT-9. (Air Enthusiast, July 1971)
- f. Junkers Ju 52s were used by the Turkish State Air Lines 1944-1947. (Albayrak, DBTHY)
- g. TDHY poster, ca. 1946. "Save time, choose the airline". (Albayrak, DBTHY)
- h. De Havilland DeH 86.
- i. De Havilland DeH 86 'TC-GEN' and 'TC-FER'.
- j. De Havilland DeH 89 'TC-DAG'. (Albayrak, DBTHY)

Footnotes

1. This article is a development of a paper presented at the Conference of Historic Aviation Writers, Ninth Biennial Meeting, St. Louis, Missouri; 22-24 October, 1999. Mr. Bulent Yilmazer of Ankara, Turkey was kind enough to offer a critique in a December, 1999, communication; his comments and corrections have been useful.

2. David C. Montgomery, Ph.D., is a Professor of History at Brigham Young University, Provo, Utah.

3. A good and recent discussion of the Ottoman Air Force during World War One can be found in: David Nicolle, "Young Turks, Ottoman Turkish Fighters 1915-1918"; *Air Enthusiast*; part one (March-April, 1998), pp. 40-45; part two (May/June, 1998), pp. 68-73; part three (July/August, 1998), pp. 6-11.

4. Though a discussion about the history of Turkish military aviation is beyond the intent of this present article, Mr. Yilmazer provided in his comments information which might be of interest and use to those probing more deeply into the topic: "...the Ottoman air service is officially known as The General Inspectorate of Air Force. The term Ottoman Air Force is a misnomer, and the Ottoman air service was never an independent force. Similarly, the air service of the Republic of Turkey did not become an independent force (Turk Hava Kuvvetleri) until 1947. During the Istiklal Harbi (Independence War) the Turkish air service was first known as Kuvai Havaiye Subesi (Air Force Branch) attached to the Harbiye Dairesi (Department of War) within the Milli Mudafa Vekaleti (Ministry of National Defense). In 1921, it was reorganized as Kuvai Havaiye Genel Mudurlugu (General Directorate of Air Force). In July 1922, it was reorganized once more as Kuvai Havaiye Mufettisligi (Inspectorate of Air Force), this time attached to the Genelkurmay Baskanligi (Joint Chief of Staff). This organization was retained when Turkey became a republic in 1923.

In 1927, the name was changed to its modern Turkish equivalent Hava Kuvvetleri Mufettisligi (Inspectorate of Air Forces). In June 1928, another organizational change took place; now it was named as Hava Mutesarligi (Undersecretariate of Air) attached to the Milli Savunma Bakanligi (Ministry of National Defense). Through all these years logistics for the air service was the responsibility of the Defense Ministry; operations were under the command of the general staff. In February 1944, the air service became an independent organization as the Hava Kuvvetleri Komutanligi (Air Forces Command); however, it had the command structure of a corps and only in 1947 became an independent branch of service known as Turk Hava Kuvvetleri (Turkish Air Forces)."

5. "Istikbal Göktedir" ("The future is in the sky"), a slogan attributed to M. K. Atatürk, appeared widely on posters and in publications in Turkey during the 1930s. Aspects of economic development in the new Republic of Turkey were guided by the principle of "statism", whereby the government directed funding to specific areas of the economy which would not show early profits to attract sufficient private investment. An informative essay about Atatürk's association with aviation is found in Muhterem Erenli. "Atatürk ve Havacilik" ("Atatürk and Aviation"), *Atatürk Araştırma Merkezi Dergisi* (Journal of the Atatürk Research Center); volume 2, number 4 (November, 1985), pp. 215-244; thirteen rare photographs accompany the article.

6. For example, only in 1927 did the United States and Turkey reestablish the diplomatic relations which had been broken off in 1917.

7. The main public expression of Turkish aviation activities was through the government sponsored civilian organization Turk Hava Kurumu (Turkish Air League) established in 1926 to promote air-mindedness. Funds were raised for military and civilian aviation activities through lotteries and public appeals. Young people were

drawn provided with opportunities for glider and eventually power flight training. The Turkish Air League currently has its main office in Ankara and has branches throughout the country.

8. Erguder Gediz. *Uçak Albümü* (Aircraft Album), volume 2; Ankara: Air Force General Staff, 1984, pp. 53a-53b. Called the "Limozin", the F.13s were in first line TAF service till 1930, when several apparently were turned over to the Turkish Air League as publicity machines and parachute trainers. Others may have become VIP transports for government officials, a type of "non-scheduled" airline. The last "Limozin" was withdrawn from flight status in 1937.

9. The Junkers G.24 apparently was the first multi-engined aircraft acquired for regular use by the new Turkish Air Force. Though these aircraft were flown with Turkish markings, they were never purchased by Turkey and remained the property of Junkers. (Bulent Yilmazer) Primarily used to transport high government officials, one G.24 was lost in a non-fatal accident in the mid 1930s. Soon afterward an example of the Junkers K.30 bomber was obtained, possibly by way of Sweden, but saw little use. During World War One a few twin-engined French-built Caudron G.4s had been captured and saw very little use in 1917 and 1918. For a brief overview of many aircraft used by Turkey see: "Pictorial history of Turkish military aviation"; *Air Enthusiast*, vol. 1, no. 2 (July 1971), pp. 83-86; in this article the transport aircraft used by the early "civilian" Turkish airline are noted as military types.

10. This was a difficult undertaking. The remote provincial center, far to the southeast from Ankara and distant from the eyes of diplomatic embassies, was not yet connected to the limited Turkish railway system. At first a logistical difficulty, the site was strategically secure. In the construction process, which began in 1926, materials initially had to be transported by ox cart and camel back. "The undertaking was announced by a half-

page newspaper advertisement in both German and Ottoman Turkish (Arabic script) for the "Turkische Flugzeug und Motoren A. G.", mentioning both war planes and sport planes. (Bulent Yilmazer) By May of 1927 a railroad line was completed to Kayseri, and heavy aircraft components such as engines could be transported by rail. The plant was opened that summer and began to assemble single-engined Junkers A.20 two-seat attack planes from semi-finished components. Financial disputes about the shared Turkish and German ownership and differing pay scales for German and Turkish engineers led to its closure in 1928 and reopening as a completely Turkish government facility. Comments about financial arrangement are from interviews conducted by David C. Montgomery at the Turkish Air League in Ankara, Turkey, during May and June of 1990. Additionally, reference should be made to a brief discussion of the Kayseri plant in Lennart Anderson. "Junkers Two-seaters", *Air Enthusiast*, number 44 (1992), pp. 70-77.

11. During the late 1920s, among the aircraft purchased from France were Morane-Saulnier trainers (MS.35s, 53s and 147s, Caudron C.59 trainers, Dewoitine D.21 fighters and Breguet Br.19 recon-bombers. Other foreign purchases in 1929 included sixteen Czech-built Letov S.16T two-seat recon/bombers. France, however, throughout the 1920s was the main aircraft supplier. Turkey during the 1930s made efforts to avoid having a single foreign source for military equipment. This, however, complicated supply and maintenance.

12. Richard D. Robinson. *The First Turkish Republic*; Cambridge, Mass.; Harvard University Press, 1963; p. 298. Ataturk's government was extremely wary of foreign loans. The Ottoman government in the late nineteenth century had become bankrupt as a result of such and had submitted to a period of foreign management of selective aspects of its economy. (Most textbooks on the Middle East discuss this difficult period. See, for example: Sydney N. Fisher and William Ochsenwald. *The Middle East, a History*; 4th edition; New York: McGraw Hill, 1990; pp. 317-318. The United States, with no prior imperialist ambitions toward Turkey, though having broken diplomatic relations had not declared war in World War One, was viewed as an acceptable foreign creditor.

13. The flight demonstration team was led by Melvin Hall and included James Doolittle, John Cannon and James Parker. William Goulding, the vice-president of the CWEC, accompanied the tour and also flew. The demonstrated aircraft were the Robin tourer, Fledgling trainer, Falcon recon/attack and P-6A Hawk fighter. Hall in his autobiography, *Journey to the End of an Era*; New York: Scribners, 1947, pp. 363-366, mentions the Turkey phase of the tour. Doolittle in his autobiography, *I Could Never be so Lucky Again*; New York: Bantam Books, 1992, does not discuss the stop in Turkey.

14. In 1929, Turkey scheduled air service was provided by two foreign airline. The Italian firm Societa Anonima Aero Espresso Italiana operated a twice-weekly service between Istanbul and Brindisi by way of Piraeus in Greece. The French airline Compagnie Internationale de Navigation Aerienne regularly flew from Istanbul to Paris by way of Sofia, Bucharest, Belgrade, Vienna, Prague, Nuremberg, Frankfurt and Strasbourg.

15. Ilyas Albayrak. *Dünden Bugüne Türk Hava Yolları* (Turkish Airways from the Past to the Present); Ankara, 1983; p. 14. A valuable, though brief, source for information about the early history air transportation in Turkey. Many photos and

an outline narrative are found in this book published to commemorate the fiftieth anniversary of the airline. This work is subsequently referred to as DBTHY. Yilmazer: The office initially administering the air line was termed Hava Yolları Devlet İşletme İdaresi (State Bureau for Airway Operations)

16. Mecid Bey; *Aircraft Yearbook* (1932), p.593.

17. Fesa Evrensev (1878-1951) was the first qualified Turkish aviator, having received flight training in France during 1912. He flew missions during the Balkan Wars. Captured by the Russians in 1916, he spent three years as a prisoner in Siberia till he escaped and returned to Turkey in 1920. He flew against the Greeks and Allies in the War for Independence. Later, he was an instructor at the Air School in Izmir. He retired from the military with the rank of colonel at the age of forty-seven. After one year spent organizing the DHY, he was active with the Turkish Air League till his death. DBTHY, p. 19.

18. DBTHY, pp. 24-27.

19. The Tupolev ANT-9s possibly ended their service in Ankara prior to World War Two. First produced as a tri-motor with radial engines and later with two more powerful in-line engines, an American aviation writer visiting Turkey mistakenly identified them as "two Fokkers" (the similar appearing F.8); William Gilman. "Those Flying Turks", *Popular Aviation*; vol. 23, no. 1 (July, 1938), pp. 18-20, 82-83. Comments on ANT-9 use are also from author's interviews in Ankara, May-June, 1990. The Soviet Union was unsuccessful in selling powered aircraft to Turkey. However, during the 1930s many Turkish glider pilots participated in events held on the Crimean Peninsula. Several Soviet designed gliders were gifted to the Turkish Air League. In 1934 Turkish airmen made a goodwill flight to Moscow. Also, in 1933 the Turks had one single-engine Polikarpov R-5 recon/bomber which was presented by the Soviets in 1933. (Yilmazer) At least one Polikarpov Po-2 was obtained for use as a glider tug. (information acquired by author while working with the Turkish Air League in 1990).

20. DBTHY, p.12. The Kingbirds purchase details are obscure. Their purchase and transfer to Turkey are not noted in Peter M. Bowers. *Curtiss Aircraft, 1907-1947*; Annapolis: Naval Institute Press, 1987. One Kingbird was registered TC-KUS (personal photo of David C. Montgomery). Additional details about the Turkish Kingbirds have just been published in Richard S. Allen. "The Curtiss Kingbird", *Skyways*, No. 52 (October, 1999), p. 17. Previously owned by Eastern Air Transport Corporation, the two aircraft in 1932 had been leased for six months to the Turkish Ministry of national Defense with an option to purchase. The Kingbirds were first used by the Air Liaison Detachment (Hava İrtibat Kıtâatı) and in May, 1933 handed over to the state airlines.

21. The Kayseri facility would serve as an important aircraft assembly, manufacture and maintenance center until after World War Two. Remote from Europe, it was far enough to the east to provide service to Turkish aircraft tasked to the Caucasus and Syria-Iraq frontiers. Reopening the Kayseri plant was necessary to maintain and develop indigenous aviation technical skills. At Kayseri, a second batch of twenty Curtiss Hawks were produced from imported and indigenous raw materials. These planes, known as the "Hawk 3", featured structural, power plant and armament modifications; they are not to be confused with the similarly labeled American-built Hawk III (F11C-3/BF2C-1) with retractable landing gear, one of

which, however, had been purchased in April, 1935 for testing. (see: Bowers, p.284) On completion of Hawk 2 and 3 production in 1935, the Kayseri plant began to assemble and then manufacture licensed examples of the Polish PZL-24 fighter; the first wholly Turkish model produced flew in May, 1936; PZL-24 production continued through 1938. (see: John W. Taylor. *Combat Aircraft of the World*; New York: Putnam, 1969, p. 287).

22. Four thousand dollars (10,000 TL) was a considerable amount of money for the time. However, it may have reflected the confident and conservative attitude of the DHY. During its first fifteen years of operation there were no fatal accidents, and no aircraft were lost. (author's information from notes taken in conversations at the Turkish Air League, 1990).

22. The Junkers G.24, often the president's aircraft, was never considered part of the TDHY fleet.

23. DBTHY, pp. 28, 32.

24. Airline development in Turkey lagged approximately half a decade behind similar patterns in Western Europe and North America. This small period of time is commendable, considering the relative technical, industrial and economic bases. For an introduction to world airline development refer to Oliver E. Allen. *The Airline Builders*; Alexandria, Virginia: Time-Life, 1981.

25. DBTHY, p. 33.

26. The Naval Air Arm operated half a dozen British-built Southampton flying boats, which had recently retired the last of ten German-designed and Danish-built Rohrbach Ro.3A flying boats obtained in the mid-1920s. However, at the time the TAF was anticipating multi-engine equipment. In 1936 twelve Bristol Blenheim bombers were ordered from England; the first were delivered in 1937. In the same year twenty Martin 139 bombers were ordered from the United States; the first were delivered in August or September of 1937. Also in 1937, thirty Heinkel He.111 bombers were ordered from Germany, the first batch of 111Fs were delivered in 1938. It is worth noting that no bombers were ordered from Italy, which was viewed as a potential foe because of its holding the formerly Turkish-held Dodecanese Islands in the Aegean. In a 1990 conversation at the Turkish Air League, the author was told that the Martin 139 was ordered because it had the range to carry a sufficient bomb load to the Italian naval base at Taranto.

28. Yilmazer: The name for the airline's official administrative body was again changed by public law number 3424 on June 3, 1938, to Devlet Hava Yolları İşletme Genel Müdürlüğü (General Directorate for State Air Ways Operation). By this time the term DHY (Develet Hava Yolları, "State Air Ways") had come into general use.

29. Refer to note 21 above.

30. DBTHY, pp. 32-45.

31. DBTHY, pp. 36-56.

32. In addition to the above mentioned twin-engine bombers being acquired, the TAF also received ten German-built Focke-Wulf Fw.58s for crew training and liaison in 1938 and 1939. In 1940, ten British-built Avro Ansons were purchased. *Uçak Albümü*, vol. 2 (1984), pp. 85b, 90b.

33. For a discussion of the Turkish Air Force during World War Two see: Gary Leiser. "The Turkish Air Force, 1939-1945: the Rise of a Minor Power; *Middle Eastern Studies*, volume 26, number 3 (July, 1990), pp. 383-395.

34. DBTHY, pp. 44-56.

35. DBTHY, pp. 47-56.

36. Front line Turkish Air Force fighter units were equipped with a tri-national assortment of American built Curtiss P-40s, British built Hawker

Hurricanes and Supermarine Spitfires as well as German-built Focke-Wulf Fw.190s. The German aircraft were newly purchased; most of the American and British-built planes were seconded from RAF stocks in the Middle East. Interestingly, the British were the main source of spare parts for the Focke-Wulf fighters and Heinkel bombers; Axis aircraft shot down over Allied lines were cannibalized for useful parts, which then were provided to Turkey. A source at the Turkish Air League in Ankara told the author that tires for the Fw.190s were always a problem. The last of the seventy-two Fw.190s operated by Turkey was retired in 1947, when flown to Kayseri and scrapped.

37. DBTHY, p.50.

38. DBTHY, p.57.

39. Turkey stopped selling chromium to Germany on May 1, 1944; up to this date, since the start of 1943, Turkey had sold 62,000 tons to Germany and 58,000 tons to the Allies. Robinson, pp. 306-307.

40. DBTHY, pp. 52-57.

41. Turkey's neutrality took shift toward the Allies at this time. Diplomatic and economic rela-

tions with Germany were broken off August 1, 1944. On February 23, 1945, Turkey declared war on Germany. No Turkish forces engaged in military actions. However, many warplanes from British stocks in the Middle East were transferred to Turkey.

42. DBTHY, pp. 25-56; these figures, as also noted by Yilmazer, possibly are not fully accurate, but are the only set readily available.

43. The value of the Turkish lira through much of this period was approximately 2.4 per US dollar.

44. The Ju.52 transport expense possibly was a "paper transaction" in exchange for Turkish chromium.

45. The thirty C-47/DC-3s were purchased from American stocks in Egypt for \$20,000! DBTHY, p.55.

46. DBTHY, p.57.

47. Directors of the DHY from its founding in 1933 were: Fesa Evrensev (1933-1934), Ayni Bey (1935), Shevket Ari and Sabri Tamer (1936), Sabri Tamer and Hasan Fehmi Süerdem (1937), Hasan Fehmi Süerdem and Ferruh Shahinbash (1938), Ferruh Shahinbash (1939-1946) and Osman Nuri

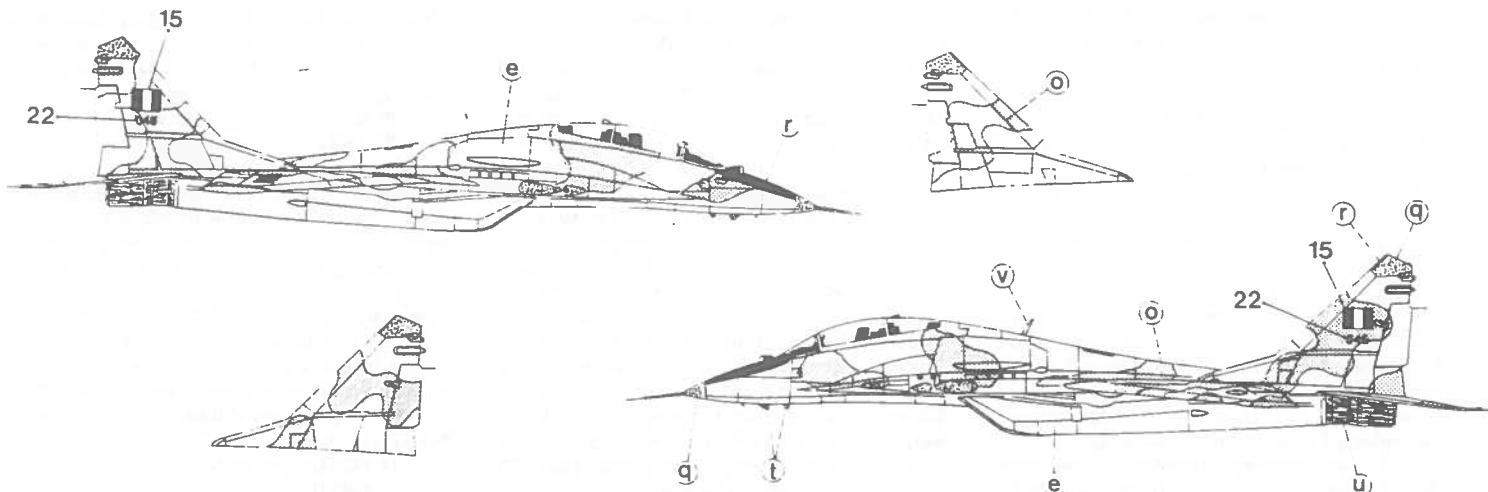
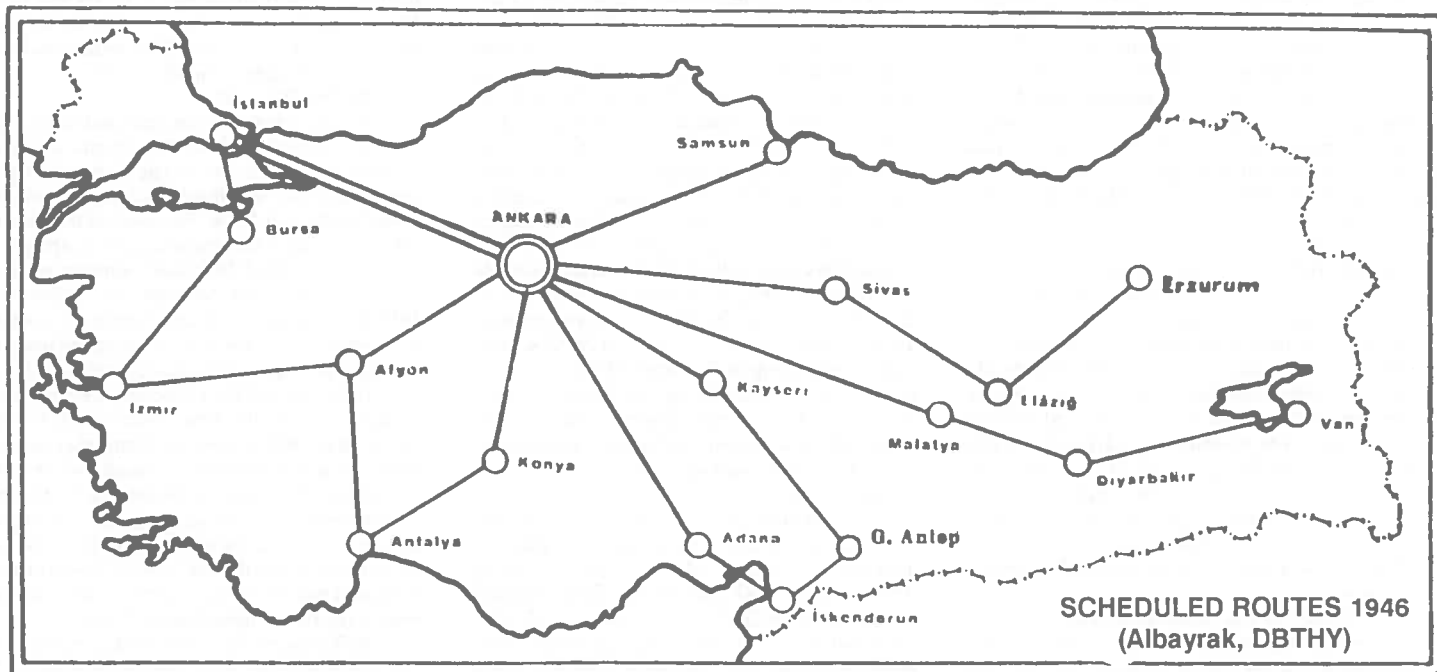
Baykal (1947-1953). Each of these men had been pilots in the Turkish Air Force. DBTHY, pp. 17-78. 48. DBTHY, pp. 63-66.

49. DBTHY, p.66. Not till 1956 were additional foreign routes added: Beirut, Lefkosha (Cyprus) and Cairo, these also flown by DC-3s.

50. In 1945, with the end of World War Two, Turkey joined the ICAO (International Civil Aviation Organization). C. Ciray, D. Kaya. "Review of Turkish Aviation and Aeronautical Industry"; unpublished report; Ankara, 1989; p.7.

51. For a discussion of the growing influence of the United States on Turkish military (and by association civil aviation) see: Craig Livingston. "The U. S. Air Force Group and the American Mission for Aid to Turkey, 1947-1950"; *Middle Eastern Studies*; volume 30, number 4 (October, 1994), pp. 778-825.

52. Alas, too late for inclusion into this report is a recently acquired copy of *Turkish Commercial Aviation*, by Mieczyslaw Budek; Baker Library, Graduate School of Business Administration, Harvard University; Boston, Massachusetts. 1955.



MiG-29UB, 611th Sqn., 6th Air Group, Peruvian A.F.;
B.A. "Capitán José Abelardo Quiñones Gonzales",
Chiclayo, 1997.

The Romanian Hurricanes in Combat

Sid Napier

In April 1939 a Romanian delegation visited Britain, France and Germany seeking to purchase aircraft and other military hardware for the modernization and expansion of the *Aeronautica Regala Romana* (ARR = Romanian Royal Air Force). The contracts signed in Britain included one, No.7368, awarded to Avro for the delivery to Romania of 50 Hawker Hurricane Mk Is that were to be operated by three squadrons, i.e., *Escadrila 53, 54 and 55*. Only 12 Hurricanes were actually delivered. These were diverted from an RAF contract and bore the serials L2077, L2078, L2085, L2093-L2097, L2104, and L2112-L2114. The other 38 Hurricanes were withheld after the fall of France in June 1940 to meet the RAF's increased need for fighter aircraft and Romania renounced the redundant Anglo-French guarantee of its security.

Delivery of the 12 Hurricanes was initiated in August 1939 and completed in March 1940. Shipment was preceded by acceptance flights carried out in Britain by Romanian pilots led by a *Capitan aviator* Draganescu - who personally flew each of the 12 aircraft. The Hurricanes were then crated and shipped to the Black Sea port of Constanta, from where they were moved by rail to the airfield at Pipera, near Bucharest. There they were re-assembled by British technicians, and again flight tested by *Capitan av* Draganescu. Given the codes 1 through 12 they were then taken on strength by *Escadrila 53 vanatoare* of *Grupul 5 vanatoare*.

As delivered, the 12 Hurricanes were powered by 900-hp Merlin IIIs and had metal wings. Photos show they were fitted with De Havilland/Hamilton three-blade propellers, had the first-type ejector exhausts, windshields with horizontal upper frame members, rear view mirrors, and early pole-type radio masts.

All 12 wore standard RAF Dark Green/Dark Earth Scheme A or Scheme B upper surface camouflage, e.g. No.1 and No.3, respectively, and had black spinners and black propeller blades with yellow tips. The spinner of one Hurricane was subsequently painted a very pale colour. The undersurface finishes varied. Some, e.g. No.3, had the entire starboard side painted white and the port side black, the two colours meeting at the fuselage centreline. Others, e.g. No.1, had only the undersurfaces of the wings painted white and black, the colours meeting at the centreline, while the undersides of the nose, fuselage from wing trailing edges to tail, and the tailplanes/elevators had been left silver. Denes Bernad states the RAF camouflage on British-built aircraft was retained until ARR camouflage was applied during a first general overhaul. (From June 1940, Romanian aircraft had been painted olive green over light blue-grey, and from early 1941 large patches of earth brown (terra cotta), or occasionally dark green, were applied over the olive green.) No photo showing a Hurricane wearing ARR camouflage appears to have surfaced to date.

Prewar Romanian insignia was initially applied: blue, yellow and red roundels in four positions on the wings and vertical blue, yellow and red stripes covering the entire rudder aft of the hinge line. In mid-May 1941, the Mihai Cross was substituted for the roundels and also applied on the fuselage. In addition, the nose, undersides of the wing tips and fins were

painted yellow, a yellow band was painted on the rear fuselage, and on some aircraft, e.g. No.3, the tail markings were shortened to cover only the upper quarter or one-third of the rudder. The code was painted in black on the fin, in white under the port wing and in black under the starboard wing.

As depicted by Bernad, Hurricane No.1 flown by *Capitan aviator* Emil Georgescu had the spinner as well as the nose painted yellow, but the fin left in Dark Green/Earth Brown with the "1" applied in yellow. The yellow fuselage band was both wider and applied farther forward than on No.3. The Mihai Cross on the fuselage was in a "seldom-used stencil-style" and worn together with an emblem depicting a mounted Mickey Mouse with lance. A photo in *Air International* shows a Hurricane with the "seldom-used" Mihai Cross on the fuselage and wings, a yellow fuselage band and fin, shortened tail markings, and the undersurface of the rear fuselage painted a pale colour. The code is not visible. Reflected light obscures any emblem possibly present on the fuselage, makes it difficult to decide whether the nose is painted yellow, and gives the impression the port wheel cover was not painted black.

A photo of Hurricane No.5, probably taken in May 1941, shows this aircraft with the Mihai Cross and yellow band on the fuselage, but with the roundels still on the undersurfaces of the wings, top-to-bottom rudder markings, and the nose not yet painted yellow. Two additional bands of colour had been painted on the propeller blades under the yellow tips; that furthest in was probably yellow and that in between possibly red. The undersides of the wing tips appear to have been painted in a colour other than the yellow of the tail markings.

Acquisition of Yugoslav Hurricanes

The Hurricanes having been taken on charge by *Escadrila 53 vanatoare*, under the command of *Capitan av* Emil Georgescu, operational training was initiated in the spring of 1940. It led to the death of *Capitan av* Draganescu when he crashed while demonstrating slow rolls at low altitude. A second Hurricane was lost on May 5, 1941. Dmitry Karlenko, who has seen the memoirs of pilots then serving with the *Voyenno-Vozdushniye Sily (V-VS)!* says it was shot down by (Polikarpov I-16?) fighters of 67 IAP (*Istribitelny Aviatsionny Polk*) when the pilot strayed over the border into Soviet air space.

Sometime after April 17, 1941 *Escadrila 53* took on strength three of the five Yugoslav Hurricanes and assorted spares captured by German forces in the course of the April War (April 6-17). A list of Royal Yugoslav aircraft to be repossessed compiled by the fledgling Croat air force in June 1941 seems to indicate that all five Hurricanes were still in Serbia or Croatia at the time. Karlenko says *Escadrila 53* only had 10 Hurricanes on June 22, 1941 and the three ex-Yugoslav Hurricanes were sold to Romania in September 1941. Mark Axworthy and Hans Werner Neulen also say September 1941, and, in his list of ARR combat aircraft, Axworthy shows nine Hurricanes held on July 8, 1941 versus 10 on August 31, 1942. But Bernad says there were 13 Hurricanes, three of

them unserviceable, on the strength of *Escadrila 53* before June 22, 1941.

There are references by various authors, including Bernad, to a reported, but unconfirmed, sale of a second batch of three captured Hurricanes to the Romanians at a later date. Mirosław Wawrzynski, who has done considerable research on Hurricanes in foreign service, opines that these last three Hurricanes were unserviceable aircraft purchased for cannibalization and therefore never shown on the ARR inventory.

The three serviceable ex-Yugoslav Hurricanes acquired are known to have been coded 13, 14 and 15 in Romanian service, but whether they had all been license-built by Zmaj (Merlin III engines, fabric wings, early-type windshields) or purchased from Britain (Merlin II and fabric wings, or Merlin III and metal wings) is not known at present. If they had been overhauled by Zmaj or Rogozarski in Serbia prior to delivery, they probably wore either regular Royal Yugoslav camouflage (dark green/dark brown/ochre over pale grey) or had been repainted in the dark green over pale grey scheme reportedly applied by Zmaj to the last few license-built aircraft. In the former case, Romanian and Axis markings were presumably painted on the existing scheme, in the latter, patches of brown paint were probably applied as well as markings. If the three were overhauled in ARR workshops, they must have been repainted in regular Romanian camouflage colours. In either case, their camouflage schemes must have differed from those of the British-built Hurricanes of *Escadrila 53*.

According to a French publication, the 12 British-built Hurricanes were armed not with eight, but with six guns. This is confirmed by the photo of No.5 which shows the second inboard gun port in the starboard wing was closed, and by the well known, but not very clear, photos of No.3 which appear to show only three guns in the port wing. However, Karlenko quotes a September 12, 1941, report by 69 IAP, which flew I-16s and defended Odessa, in which there is reference to an 8-gun Spitfire or Hurricane, which had been shot down and crashed and burned northeast of Groslenental(?). There is also a photo of an 8-gun Hurricane in Denes Bernad's book, but the markings cannot be discerned. The origin of this apparent contradiction would seem to be that the Romanians armed their British-built Hurricanes with six FN Brownings but took the ex-Yugoslav Hurricanes on strength with their original armament of eight FN Brownings. (In 1939, the Romanians contracted to install Belgian FN Brownings in their aircraft. The calibre of the FN Browning was 7.92 mm/0.312 inch and the projectile weighed 12.75 g/0.45 oz, as opposed to 7.7 mm/0.303 inch and 9.63g/0.344 oz for the British Browning. The rate of fire given by the RAF Museum at Hendon for the Browning Mk II is 1100 rounds/minute; the same figure is given for the FN Browning by other air forces. The weight of a one-second burst from six 7.92 mm FN Brownings was therefore only about 28 grams/1 oz less than a similar burst from eight 7.7 mm Mk IIs, while eliminating two guns gave a weight saving of at least 20 kg/44 lbs.)

Combat

By the spring of 1941, *Escadrila 53 vanatoare* had moved to Mamaia just north of Constanta, and, in mid-June 1941, it

was transferred, as an independent squadron, from *Grupul 5 vanatoare* to *Comandatul Area Dobrogea* (Air Command Dobruja) responsible for the defence of the Black Sea coastal region. Specifically, the Hurricanes were tasked with the defence of Constanta, Romania's main naval base and terminal for oil shipments to Italy, and the strategic rail bridge over the Danube at Cernavoda. (The defence of Bucharest was assigned to the PZL P.24Es of *Escadrile 61* and *62*, and that of rear zones to the PZL P.11Fs of *Escadrile 43*, *44* and *45*, and the PZL P.11Cs and P.11Fs of *Escadrile 46*, *45* and *50*)

On June 22, 1941, Romania joined Germany in Hitler's assault on the Soviet Union (Operation Barbarossa). The objective was to recover Bessarabia and the Northern Bukovina, the territories occupied and annexed by the Soviets in spring 1940 as a consequence of the German-Soviet NonAggression Pact of 1939. According to a letter from an unnamed ("by request") reader published in *Air International*, *Escadrila 53* "moved to Danlic(?) airfield on June 22, 1941, to provide fighter cover for bombers operating from the same base. As a result of identification problems over the front line - the anti-aircraft batteries and the pilots of the Bf 109Es shooting at any Hurricane - the Hurricanes were back at Mamaia by October, resuming their earlier coastal defence task". Karlenko states Hurricanes escorted the PZL P.37s of *Grupul 4 bombardament (Escadrile 76 and 77)* which bombed Odessa around midday on June 22, 1941 and continued to provide fighter cover for Romanian bombers throughout the siege of Odessa (August to October 16, 1941).

Bernad says *Escadrila 53* operated mainly over Romania's Black Sea coast, and he and Axworthy mention neither the fighter cover flown at the siege of Odessa nor the 69 IAP report referring to a 'Spitfire or Hurricane' shot down near Groslenental (?) on September 12, 1941. They state only that, by the end of 1941, *Escadrila 53* had claimed 35 Soviet aircraft shot down for the loss of only two Hurricanes. Bernad notes that *Adjutant sef aviator* (First Sergeant) Andrei Radulescu was credited with seven confirmed and four unconfirmed victories while flying a Hurricane. Both Bernad and Axworthy mention *Locotenent aviator* (Lieutenant) Horia Agarici's feat of June 23, 1941. Agarici scrambled alone in a damaged Hurricane undergoing repairs and intercepted nine DB-3 bombers attacking the Romanian fleet at Constanta. In a series of passes he shot down two DB-3s near Constanta and claimed a third shot down out at sea. (Karlenko says the Hurricane was No.1 and Agarici shot down two SB-2s.) Axworthy remarks that "Agarici had the misfortune to have a name that rhymed with the Romanian for *Bolhevik* and he thus became the subject of a popular ditty commemorating his feat, with the belated result that after the war the Communists came down more heavily on him than his lowly position in the list of Romanian fighter aces merited". Neulen notes that, after Romania switched sides in 1944, Agarici was arrested and sent to a prison camp.

(The date of Agarici's feat, June 23, would appear to confirm that *Escadrila 53* as a whole must have been in action in the Odessa area at the time. Had the squadron still been at Mamaia on that day, Agarici would not have had to scramble alone and in a Hurricane just undergoing repairs. Relocation to "Danlic" on June 22 poses a problem as Axworthy mentions that Soviet airfields near "Dalnik" were aban-

doned only after a Romanian ground assault over September 11-15 brought them within artillery range. There is a Veliki Dal'nik west of Odessa and a Dalnik east of Dnistrovski Liman).

There was low fighter activity by the ARR following the fall of Odessa on October 16, 1941, until August 1, 1942, with *Escadrila 53* continuing to fly Hurricanes throughout the early months of 1942. One Hurricane was lost and maintenance problems proliferated owing to the lack of spares. According to Air International's unnamed reader, some of the Hurricanes were cannibalized as sources of spares for others but "So far as the Hurricane's Merlin engine was concerned, this created fewer problems as the Romanian Navy had similarly powered Vosper-type boats." However, Axworthy remarks that the Hurricanes "engaged in a rivalry with the Romanian Navy over engine spares" for three Merlin-powered Vosper MTBs based at Constanta, and Karlenko says Merlins were taken from some of the Hurricanes as replacements for similar engines that powered six ex-Dutch MTBs.

By mid-1942, according to Bernad, the Hurricanes had been relegated to the operational trainer role and *Escadrila 53* had converted to IAR 80A and 80B fighters. Air International's source states that "Early in 1943, the few surviving Hurricanes were withdrawn and flown to the IAR factory at Brasov. ... By the autumn of 1944, the last of the Hurricanes had been scrapped." According to Axworthy, the ARR's combat aircraft holdings still included 10 Hurricanes on February 1, 1944.

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Modelling the Romanian Hurricane in 1/72 Scale

Either the Airfix or the Hasegawa kit can be utilized to build a 1/72 scale model of a British-built Romanian Hurricane Mk I. Ian M. Day and John Riley reviewed both kits in IPMS (UK) Magazine Issues 6/98 and 1/99. They concluded that the better choice was the Airfix Mk I, boxed as such, with decals for the codes JX-B of 1 Squadron and DT-A of 257 Squadron. Day and Riley's main objections to the Hasegawa kit are the exaggerated ribbing on the rear fuselage ("more Ju 52 than Hurricane"), wings with Mk IIb armament features that need eliminating, and only four parts plus a decal for cockpit detail. However, the Airfix kit offers only a floor, seat/bulkhead and pilot figure as cockpit detail, the wheel wells have to be boxed in, and the cartridge case ejection slots are not even ghosted. Moreover, other reviewers and modellers have praised the Hasegawa kit's accuracy, mentioning that there is wheel well

and radiator detail. The exaggerated rear fuselage ribbing, they say, can be reduced to acceptable level by applying two coats of primer and sanding gently after each application. But whichever kit is used, the modeller who wants cockpit detail will have to resort to scratch building or an update set. Kendall's No.72-7010 resin set is reportedly designed for the Hasegawa kit; Airwaves and Eduard both offer brass frets.

Construction: The Airfix and Hasegawa kits can both be made up as shown in the instruction sheet, except for the following: 1) Fit the propeller and spinner from an Airfix Spitfire Mk I instead of the kit parts. 2) Make a pole-type radio mast as a replacement for the kit part and mount a stub pole on the rudder above the hinge line. (Use of brass and fine steel wire recommended). 3) Fix a bead sight on the cowl. (Steel wire recommended.) 4) According to a reviewer, the Lockheed-style tail wheel of the Hasegawa kit should be replaced with an early Dowty unit.

If the Airfix kit is utilized, it is worth doing the following: a) Add two small fairings on each side of the cowl behind the spinner, and drill out the crank hole and small vent holes below the port exhaust stack. (See plans or photos) b) The exhaust stacks are acceptable, but that on the port fuselage half is not as well moulded as the other. It might be an idea to replace both with the appropriate parts from the Revell Mk IIb kit or Defiant exhausts from the Aeroclub range. c) Take care when attaching the tailplanes to ensure the elevator hinge lines are in line with one another and at right angles to the fuselage centre line. d) Consult photos and bevel the edges of the wheel covers (Parts 20 and 21) and add the missing undercarriage struts. Open up the tail-wheel recess and lengthen the upper end of the tail wheel (Part 28) with a piece of tubing to facilitate installation. e) Make a replacement radiator flap from thin card and fix in the open position. f) Consult photos/drawings and add detail to the completely blank radiator front. g) Drill out all gun ports except the second inboard port on both sides. (Six guns, not eight!) h) Drill/file cartridge case ejection slots in the wing undersurfaces.

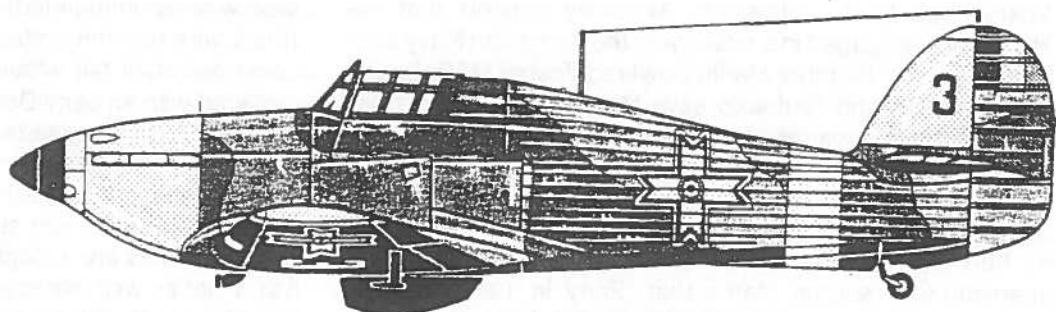
Painting: There appear to be no reference materials available that show a Romanian Hurricane wearing anything other than standard British camouflage. Readily available photos and drawings show No.3, so this was the aircraft modelled using the Airfix kit. Humbrol paints were used throughout. The cockpit sidewalls, floor, seat/bulkhead and scratch-built detail were painted H158 Interior Green and dry brushed with H64 Light Grey, the instrument panel and gun sight were painted H33 Black. H29 Dark Earth and H30 Dark Green were used for the Scheme B upper surface camouflage, H33 Black and H34 White for the two halves of the undersurfaces. H33 was also used for the spinner and prop blades, but H67 Tank Grey for the tires. The nose, fuselage band, fin, wing tip undersurfaces and propeller blade tips were painted H24 Trainer Yellow. H56 Aluminium was used for the wheel wells and tail-wheel fork. The exhausts were painted H113 Rust and dry brushed with H33 Black. A coat of gloss varnish was applied prior to decaling.

Decaling: Hurricane No 3 wore plain Mihai Crosses. Judging by photos and pictures (e.g. Scale Aircraft Modelling Vol.12, No.11. pp 506 and 507), these should measure about 15.0 mm in width, including the white outline. The decals supplied with the Matchbox Messerschmitt Bf 109E kit were

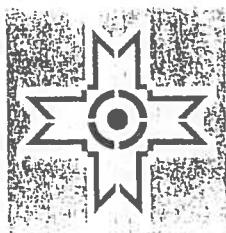
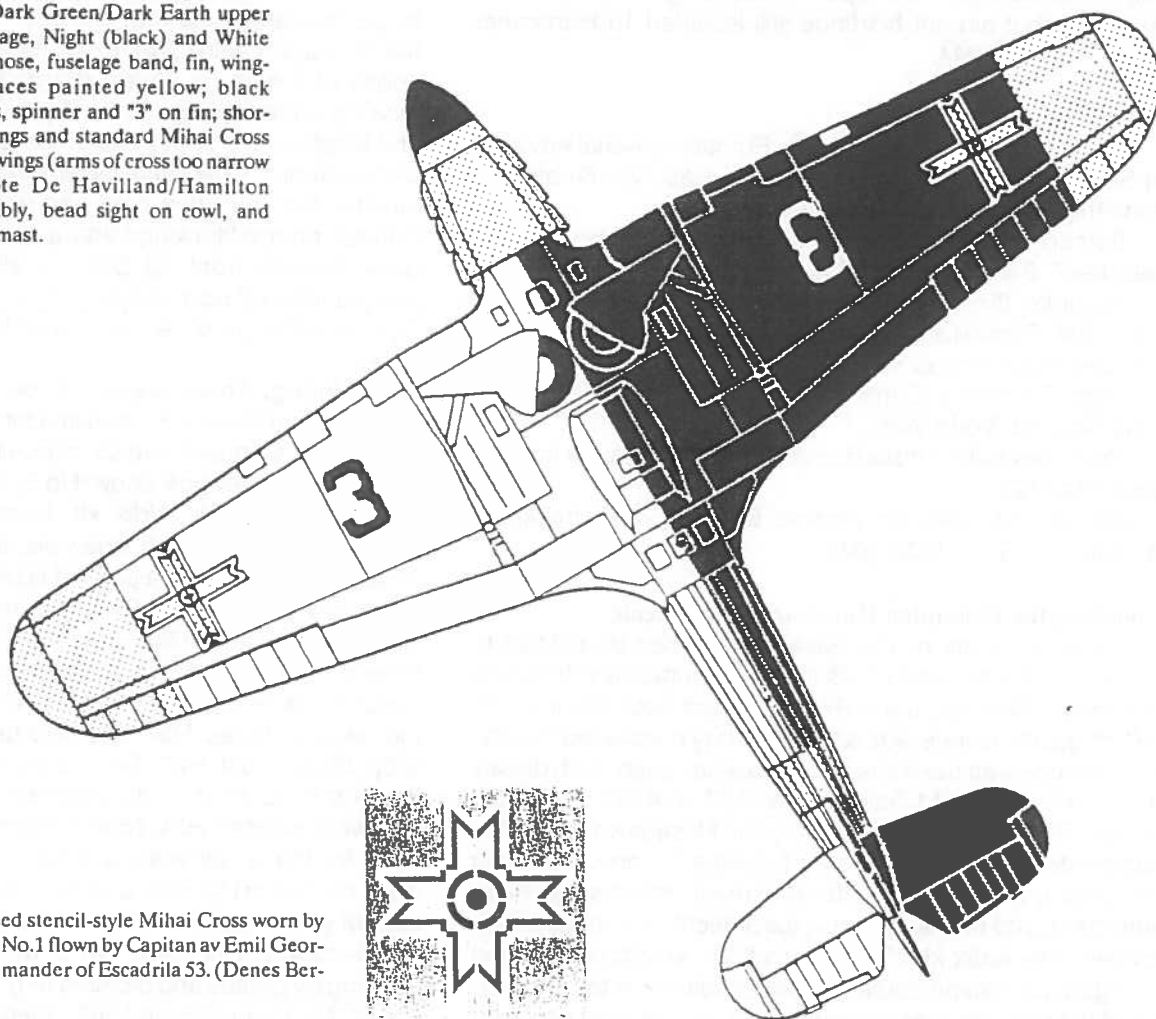
found to be the nearest match as regards size (14.5 mm) and appearance. Those supplied with the Heller Heinkel He 112 and PZL P.37 Karas are unsuitable as they represent a stencil-style Mihai Cross. The shortened rudder markings were applied using trimmed decals from the Matchbox Bf 109E sheet. The narrow blue stripe was widened with material cut from a second set. Decals for the code numeral proved difficult to find as regards size and shape. In 1/72 scale, the black "3" on each side of the fin should measure 5.0 mm by 2.5 mm, the one black and one white on the wings, 10.5 mm by 6 mm. Close, if not exact, matches were eventually found with the help of Mike Acteson of the IPMS (UK) Decal Bank.

As the larger "3"s were white, a sharp scalpel was used to separate one from its surrounding film but without cutting through the paper backing. The "3" and its surround were then painted H33 Black. Wetting the decal subsequently released the "3", but it was very fragile, necessitating careful handling and plenty of water on the model to avoid tearing while it was being positioned. The model was completed by applying a coat of matt varnish.

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Hawker Hurricane No.3 of Escadrila 53 as depicted in *Scale Aircraft Modelling*, Vol.12, No.11. British Dark Green/Dark Earth upper surface camouflage, Night (black) and White undersurfaces; nose, fuselage band, fin, wing-tip undersurfaces painted yellow; black propeller blades, spinner and "3" on fin; shortened tail markings and standard Mihai Cross on fuselage and wings (arms of cross too narrow on latter). Note De Havilland/Hamilton propeller assembly, bead sight on cowl, and pole-type radio mast.



Seldom-used stencil-style Mihai Cross worn by Hurricane No.1 flown by Capitan av Emil Georgescu, commander of Escadrila 53. (Denes Bernad)

History of the Experimental Attack Plane Su-8

Victor Kulikov

One of the outstanding, but little known, Soviet attack aircraft of the WWII period is the twin-engine Sukhoi Su-8. In the middle of the 1930s, theorists of air war throughout the world came to a conclusion that a two-engine aircraft would make an ideal combat machine since the highest speed, range, and climb rate could be achieved on such aircraft, and it could be equipped with the most powerful attack and defensive armament to carry out numerous functions such as interceptor, escort, reconnaissance, tank destroyer, and short-range bomber. In the USSR, the design of such an aircraft was begun in 1937-1938 by N.N. Polikarpov (VIT-1, VIT-2, MPI-3), V.K. Tairov (OKO-6), and others.

In 1940, when the OKB (Opytnoe Konst-Ruktorskoe Buyro: experimental design bureau) headed by P.O. Sukhoi was organized, it was assigned the task to design a two-engined fighter. On 9 October 1940, Pavel Osipovich Sukhoi initiated the preliminary design of a single-seat fighter powered by two water-cooled AM-37 engines. The cantilever mid-wing aircraft was to have a wing loading of 190 kg/sq.m. The main objective was to achieve maximum speed, range, and ceiling while carrying a powerful armament.

The cockpit was to have a large bullet-proof windscreen with several side windows. On each side of the nose two cannons were mounted and six machine guns were mounted under the cockpit. The petrol tank was behind and above the cockpit and the ammunition storage boxes were below the cockpit. Under the petrol tank, in a special bay between the wing spars, was a bomb bay with room for bombs with a total weight of 400 kg.

The two-spar wing, without the sweep on the leading edge, consisted of a center section integral with fuselage and port and starboard sections with a slight dihedral. The engine nacelles and the auxiliary fuel and oil tanks were suspended from the center-section torsion box. For greater maneuverability, the wing was equipped with powerful high-lift devices: slats along almost the whole leading edge of outboard wings, three-section flaps on the wings from ailerons to engine nacelles and under the center-section. Wood would have been the main construction material.

After several design modifications, this aircraft was designated "IOP" (Istrebitel Odnomestny Pushechny: one-seat cannon fighter). Extensive consideration was given to the service of the armament. All cannons and machine guns were mounted on a common carriage behind the cockpit while the cartridge boxes were placed between the spars of the center wing. The whole carriage could be lowered and quickly recharged. Now the "IOP" carried no bombs, but instead was equipped for aerial photography. The wing area was enlarged by increasing the wing span and tip chord. The vertical tail was of the twin fin configuration.

An aircraft with a pressurized cabin was proposed with the cannon and machine gun armament located in the nose and with the AM-37 engines replaced by more powerful AM-38 with turbo-superchargers TK-3.

At the same time, a project for a SB (Skorostnoi Bombardirovshchik: high-speed bomber) variant was considered, this was to be a two-seat aircraft with a pressurized cabin for both crew members. Defensive armament consisted of two

remotely-controlled ShKAS machine guns in the nose and a 12,7 mm machine gun for the gunner for protection from the rear. A bay for the internal storage of nine FAB-100 bombs or two bombs of larger calibre was located in the central part of fuselage.

In spite of the high performance predicted for all of these projects, the works on these aircraft was stopped because of the shortage of VK-105, VK-107, AM-37 engines. These engines were more urgently needed for serial production of the Jak, LaGG, MiG, and Li-2 aircraft.

Almost a year passed before the appearance of the experimental M-71 engine allowed work on two-engine fighter to be resumed. The designers at the Sukhoi OKB proceeded to rework the aerodynamic configuration and elaborated a number of modifications in one- and two-seat variants. Finally a choice was made for a fighter with a cockpit arrangement not unlike the two-seat attack aeroplane Su-6 with the crew, pilot and radio-operator, sitting back to back. The pilot could conduct the fire from machine-gun/cannon battery that was placed in front of the cockpit while the gunner could repulse the attacks from the rear hemisphere with the upper UBT machine gun and with a machine gun located in a lower hatch. Total weight of the cockpit armour was 270 kg. Under the cockpit behind the first spar was a bay for 200 kg of bombs. This variant, designated the "I" (Istrebitel: fighter), powered by two air-cooled M-71F engines with turbo-superchargers, was designed for long range missions at high altitude. The fuselage consisted of three parts: a metal nose section, a central cockpit constructed from wood and armour, and a wooden tail unit. The metal center-section of the wing with outer wing sections and metal engine nacelles passed under the cockpit. However, when the raids of German bombers against Russian cities decreased in intensity, the necessity for such fighter disappeared.

In 1941, the single-seat fighter project was used as a basis for the design of a single-seat armored attack plane. Then, the design became a two-seater when a gunner/radio operator was introduced to protect the rear hemisphere. He would operate both the lower and upper machine guns. The crew was protected by armor. A large petrol tank was fitted behind the pilot's armored seat back, while a battery of guns was fitted behind the center-section wing spar. The rear of the fuselage was of wood construction. This aircraft received the designation DDBSh (Dvukhmotorny Dalnyi Bronirovanny Shturmovik: two-engine long-range armored attack plane) or B machine. Detailed design started in May of 1942 and the paper work was completed in four months. The building of two experimental aircraft, now designated Su-8, began in August of 1942. They were built in Molotow (now Perm) in the Urals where the Sukhoi OKB had been evacuated. The factory was located on the premises of Aircraft Engine Factory No 19 which turned out engines designed by A.Shvetsov. By 1 January 1943, the two prototypes were ready.

The Su-8 was a mid-wing monoplane with totally armored cockpit, engine, petrol tanks, and oil tanks coolers. The total weight of the armour was 1680 kg. The aircraft was powered by two M-71F engines that had maximum take-off power 2200 hp and 1900 hp at an altitude of 3600 m. The fuselage was of

composite construction: a front section armored with steel 4-15 mm thickness, a middle section of duraluminum with armor protection for the radio operator/gunner, and a rear section of wooden monocoque construction. The central section of the wing was of duraluminum with steel spar. The outboard wings were wood with duraluminum spars. The tail unit was of duraluminum. The undercarriage, with 1200 x 450 tires, retracted backwards into the engine nacelles with the help of hydraulic drive; the tail wheel was retractable. From behind, the pilot was protected by armored glass of 64 mm thickness.

The aircraft was designed to support the offensive operations of the land troops, to act far from airfields, and to destroy enemies rear communications. The armament of Su-8 was extremely powerful: four anti-tank cannons NS-45 of 45 mm calibre, eight ShKAS machine guns, ten rockets, 600 kg of bombs carried internally and 1400 kg of bombs carried externally in overload conditions. The gunner/radio operator operated a UBT machine gun (calibre 12,7 mm) in the upper mounting and a ShKAS machine gun in the lower hatch mount. The ammunition capacity was 5900 cartridges (weight 232 kg).

When, in 1943, the Sukhoi OKB returned to Moscow, the Su-8 prototype was placed on a barge for delivery to Tushino Airfield in Moscow. It took the long way around via the rivers Kama, Volga, and Moskva, thus delaying the tests. In Moscow the aircraft was assembled and test-pilot N.D. Fikson conducted the factory tests. Then, testing was continued at the LII VVS (Letno-Ispytatel'nyi Institut: Flight Test Institute of Air Forces). During these tests many faults were revealed in the aircraft structure and engines. Soon it became clear that the M-71F engines were not suitable for serial production. The designers began work on a variant of Su-8 with AM-42 water-cooled engines which were destined for the new assault plane Il-10.

In the autumn of 1942, after the initial design of the Su-8 was completed, Pavel Sukhoi proposed an additional variant. This was a SB (Srednyi Bombardirovshchik: medium bomber) with a 1359 kg bomb load, a 1500 km range, and maximum speed of 566 km/h at the height 4600 m. Modifications consisted of a slight alternation to the nose, addition of a third crew member, replacement of the central gun battery by a bomb bay, and removing the armour from the engines. It was also proposed to modify the aircraft into a high-altitude reconnaissance machine with a 2000 km range and a 595 km/h speed at the height 8300 by equipping it with turbo-superchargers, additional petrol tanks, and photo equipment.

The Sukhoi OKB also proposed fitting the Su-8 with M-82 engines for a of bomber and reconnaissance version. This aircraft would have a four-members crew, a take-off weight of 16500 kg, a maximum speed of 496 km/h, a ceiling of 9350 m, and a flight range of 4400 km. There also was a project of single-engine DB (Dalnyi Bombardirovshchik: long-range bomber) with either a M-82 or AM-37 engine. The four-members crew would consist of a pilot and front, lower, and rear gunners. With a 9700 kg take off weight, the aircraft would

have a maximum speed of 484 km/h, a ceiling of 8700 km, and a flight range of 4180 km. All these projects remained in the drawing.

In speed, the Su-8 was close to that of the Il-10, but its maximum range was two times greater. With its compliment of armament, the Su-8 was the most powerful assault plane of its time. However, it was not built in series since, when flight tests of Su-8 finished late in 1944, the defeat of Germany had become inevitable and the necessity for a long-range assault plane was passed. In addition, the M-71F engines were never released for serial production.

Su-8 Specifications:

length	13,5 m
wing span	20,5 m
wing area	60,0 sq.m
horizontal tail area	10,2 sq.m
vertical tail area	6,6 sq.m
empty weight	9180-9218 kg (depending on armament)
fuel/oil weight	2370 kg
total load	3528 kg
flying weight	12425-12736 kg
overload weight	13380 kg
wing loading	212 kg/sq.m
power loading	2,9 kg/hp
load ratio	28%
speed at sea level	485 km/h
speed at 4600 m	550 km/h
landing speed	140 km/h
time to 3000 m	7,3 min
to 5000 m	9,0 min
operational ceiling	9000 m
range	
(with 600 kg of bombs at 600 km/h)	1450 km
takeoff & landing run	350 m

Comparative data of two-engine aircraft designed by the Sukhoi OKB 1940-1943

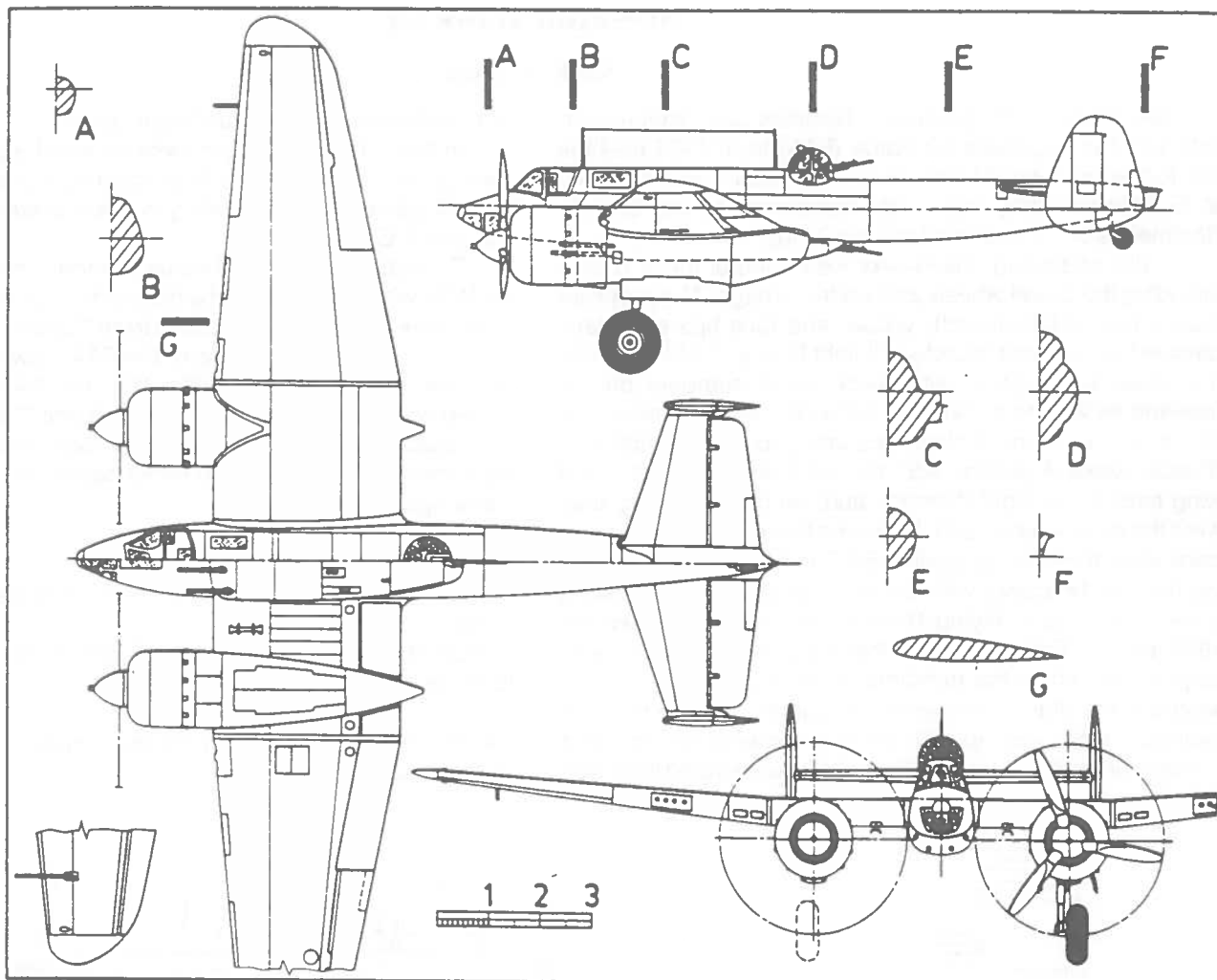
Type of the aircraft	IOP	IOP	I with TK-3 two-seat M-71F	SB AM-38
Engine	AM-37	AM-38		
length m	11,12	11,0	12,7	13,42
wing span m	15,2	17,1	17,6	20,4
wing area sq.m	34,0	39,0	48,0	52,0
empty weight kg	5140	5647	7450	7032
total load kg	1340	1703	2650	3115
flying weight kg	6480	7350	10100	10147
speed at sea level km/h		540	550	535
speed km/h	670	700	660	630
at the height m	6000	7800	8300	8500
time to climb, min(km)		5,5(6,0)	8(7,8)	10,6(8,3)
operational ceiling m	11500	12000	11900	11700
range km	1800	1400	2000	2000

Photo Captions (all photos via the author)

1, 2. First prototype of the Su-8 during factory tests at Tushino Airfield in 1943.

3. The Su-8 while under test at the LII VVS in 1944.

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Latin American Air-to-Air Combat (Part 3)

Santiago A. Flores

[Author's note: Information has come to light about another aerial victory that occurred in a military action in South America.]

A Failed Revolution/Argentina 1955. On 16 June 1955, elements of the Argentine Navy, Army, and Air Force started an unsuccessful revolution to remove General Juan Domingo Peron from power. On that day, aircraft of the Argentine naval air force carried out strikes against the government house in Buenos Aires, but with little effect, using a number Of Beechcraft AT-11 and North American AT-6 Texan trainers. During the return from one of these attacks, two AT-6's were intercepted by a flight of four Gloster Meteor MK.IV of the Air Force VII Brigada. The AT-6A (0352/ 3-A-23) flown by Guarda Marina Armado Roman was attacked by three Meteors, the first two, fired to scare him off, without hitting him. But the third Meteor, I-063 flown by Tte. Ernesto Adradas, score fatal hits with his 4 20-mm cannons, forcing Roman to bail out over the River Plate, at about 500 feet. The pilot was rescued by a boat of the Coast guard service. (This particular Meteor entered service on 11-05-1949, and during its long service life, it would suffer about five accidents before being retired from service in 1966.) By the end of the day, the revolution failed

to gain support and a small number of Naval and Air Force aircraft were flown to Uruguay, including a Naval C-47 and some Gloster Meteors. These aircraft were later returned to Argentina.

On 16 September 1955, another revolution was made against Peron. This one ended on the 22th with the Dictator going into exile (only to return later).

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Aircraft Wars and Aircraft, A Detailed Record of Air Combat, 1945 to the Present. By Victor Flinham. Facts on File 1990.

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Air Aces Homepage: <http://www.cableregina.com/users/magnusfamily/airaces1.htm>

Air Combat Homepage: <http://www.webruler.com/air-combat>

Marios Model Web Site: <http://www.modelersite.com.ar>

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Argentine Hawk III

Nils R. Treichel

Ten of these late-generation biplanes gave sterling service with the Argentine Air Force (FAA) from 1936 until the late forties! First used by the Grupo de Caza 1 and stationed at El Palomar, they were later transferred to the 2nd Air Regiment's 3rd Squadron Training Group.

In the beginning, the Hawks were natural metal overall including the wheel wheels and undercarriage. The propeller baldes had red (outward), yellow, and blue tips and black back sides. National roundels of light blue and white were in the usual six position with black serial numbers on the fuselage as well as above and below the wings. Orientation of the latter is not quite clear: according to the description in "Fuerza Aerea Argentina #5", the number on the starboard wing read in the flight direction and, on the port wing, they were the other way around. However, two photos in the same book show the exact opposite. [Ed. The drawing accompanying this article agrees with the photograph in the Argentine book. Drawings in Flying Review International, December 1966, and Air Enthusiast, October 1972, of a/c #5 and #10 respectively, show the numbers on the top surfaces of the wing with the alignment orientation. Can any of our Argentine members clear this up with photos showing the top and bottom surfaces of a Hawk III?] Rudders are striped light blue

and white with a yellow sun in the center.

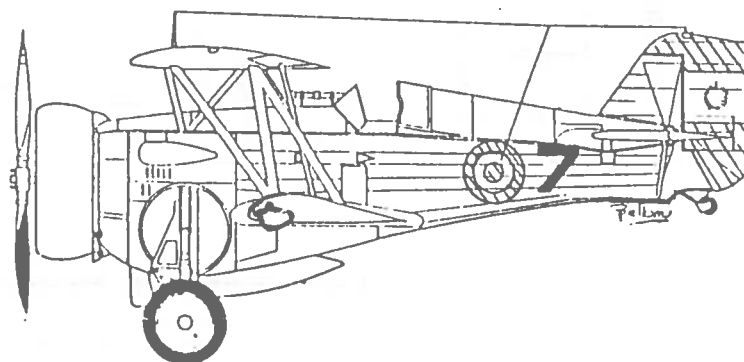
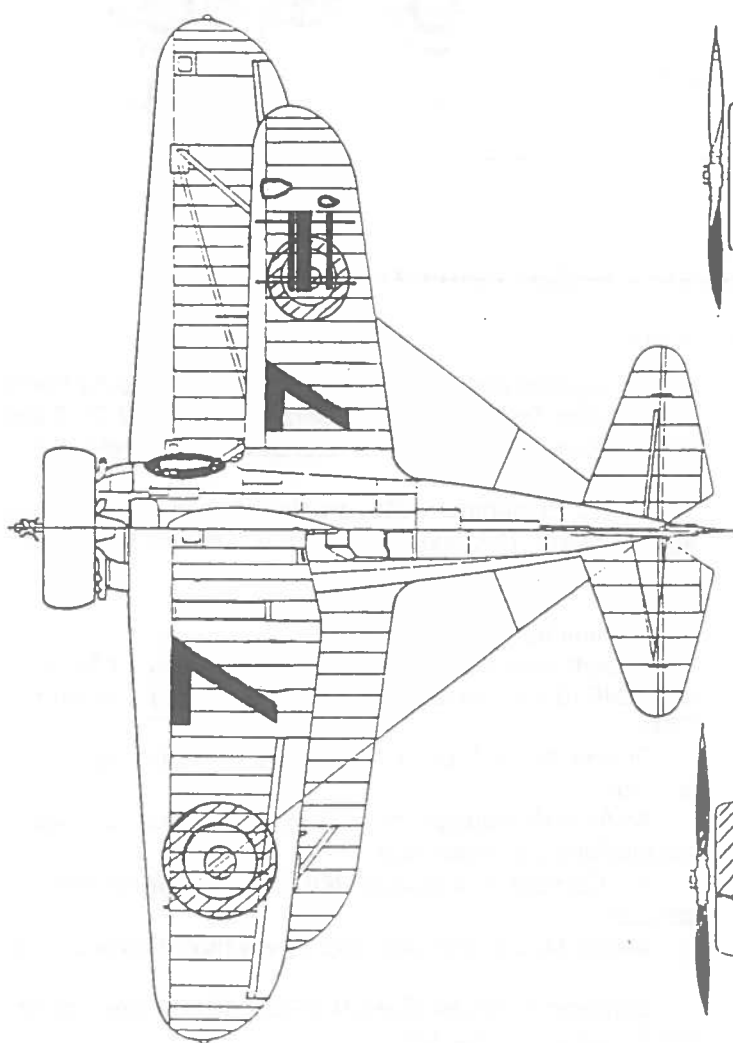
In 1943, the surviving Hawks received a camouflage of dark green upper and light blue lower surfaces. Serials were now displayed on the cowling in small white numbers with the prefix 'C'.

Two kits of the Hawk III exists: A short-run 1/72-scale one by MPM which is already a bit difficult to find, and a quite new 1/48-scale injection-molded one from Classic Airframes. The bulge on the starboard side of the FAA Hawks was shorter than the one on the port side. [Ed. The FAA Hawks were armed with one 12.7 mm (50 Cal) and one 7.65 mm (30 cal) Colt machine guns.] Landing lights were installed beneath both lower wings and bomb racks could also be carried on the wings.

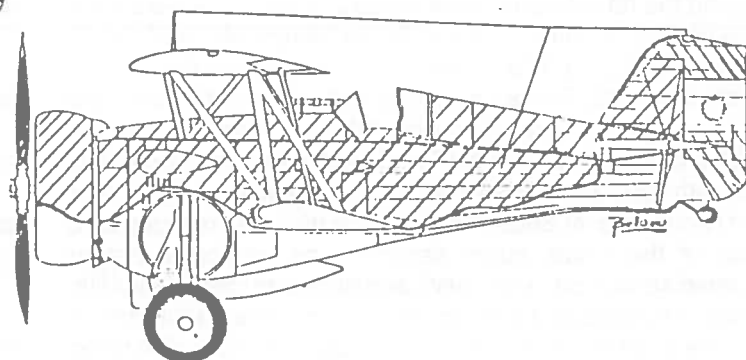
Sources:

1. Articles from Aerocalcas, sent by A.O. Serra of Buenos Aires.
2. Fuerza Aerea Argentina #5, "Curtiss Hawk", Sergio Bel-lomo, et al.

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6 10 3 2



Fine Foxes: The Renard Monoplane Fighters

Christian Hotte

In the second half of the '30, with the rearmament of Germany, the Belgian General Staff had legitimate concerns: The Belgian Air Force consisted of biplane aircraft which were well on their way to becoming obsolete and could not provide any real opposition in the event of major confrontation. Its fighting component was the biplane Fairey Firefly, an elegant airplane but with its top speed of 350 km/h and its two 7.7-mm machine guns would not constitute an obstacle to the rising generation of Messerschmitt 109s and Heinkel 112s.

At that time, however, the Belgian aeronautics manufacturer, Alfred Renard (1895-1988), who was aware of the future of the single-seat fighter monoplane with retractable undercarriage, was developing a whole family of fighter aircraft whose performances were potentially able to match that of the Hurricane, maybe even the Spitfire. This engineer had already conceived a whole series of robust airplanes in the '20 and '30. His recce aircraft, the Renard R-31, which was adopted by the Belgian *Aeronautique Militaire* in 1934, still equipped Belgian units at the time with the German invasion (see the article by Walter Verstraeten in SAFO #58).

Renard R-36

In 1936, the Renard firm undertook the study of a monoplane cantilever fighter aircraft on its own funds. It was unfortunate that all aircraft in this series, until 1940, did not receive any subsidy from the Belgian government. This aircraft, of traditional construction for the time, incorporated innovations such as a retractable landing gear, an enclosed cockpit, and a parachute in the cone tail to help it to come out of a possible flat tail spin (which was abandoned after the aircraft was shown to be particularly stable). The power plant was the famous standard 910 hp "moteur-canon" Hispano-Suiza 12 Ycrs 21 (the same as powered the French Dewoitine D-520) with a 20-mm cannon firing through the hub of the three-blade Ratier propeller. Four 7.7-mm Browning machine-guns in the wing supplemented this armament.

The prototype achieved its maiden flight from the airport of Brussels-Evere on November 5, 1937 with Adjudant George Van Damme at the control. The flight was very satisfactory. The aircraft reached the speed of 505 km/h, outclassing the French Morane-Saulnier MS-405 which reached, at the time, only a speed of 443 km/h at 4000 m. The plane gained an unquestionable success when it was demonstrated to several foreign delegations (including one Chinese!) in November 1938. But no orders followed. The company announced the initial production of six R-36, but only three airframes were completed. The type of motor fitted gave rise to the R-36 (Hispano-Suiza), R-37 (Gnome & Rhone) and R-38 (Rolls-Royce Merlin). The construction of a fourth airframe was considered for the R-40, but the events of May 1940 were to prevent any development.

At the end of the first flying tests, several modifications were made to the prototype R-36. The most important were the addition of a radiator under forward fuselage and the enlarging of the tail surfaces. Unfortunately, on 17 January 1939, this aircraft crashed during a test flight killing its pilot, Lt Eric de Spoelbergh. This accident, which was not caused by a failure of the aircraft, did, however, end any possibility of

an order from the Belgian *Aeronautique Militaire*.

Renard R-37

To compare the most advanced power units of the time, the Renard firm fitted the second airframe with a Gnome & Rhone 4N21 engine of 1050 hp (this engine equipped the French Bloch 150/152 series). Designed for ground attack, its armament was to be four 7.7-mm machine-guns (or two 13.2-mm machine-guns) as well as underwing racks for eight 10-kg bombs. The aircraft, carrying registration number OO-ATJ, was still in a hangar at Evere when the German troops occupied the airfield. It was, thus, a German pilot who accomplished the maiden flight of this airplane on a unknown date. This aircraft was to disappear during the war.

Renard R-38

The R-38, the third prototype, was powered by an 1050-hp Rolls-Royce (Merlin II ~ engine (the same engine that powered the Hurricane Mk I) with an Hamilton Standard three-blade propeller. Flight tested for the first time on 4 August 1938 by the chief-pilot Burniat, its performance was remarkable. The same Burniat, many years later, was to comment, "Qualities of flight and the

performances of this plane placed it between the famous Hurricane and the marvellous Spitfire." The armament was the same as that of the R-37.

During the German invasion, this aircraft was evacuated to France where it was to be embarked for North Africa. However, it was abandoned on the airport at Bordeaux. When WWII ended, it was in Munich! The Belgian authorities did not wish to recover the aircraft and it was lost.

Renard R-40

Work was undertaken on an high altitude interceptor R-40 on behalf of the French Air Ministry. It was an aircraft rather similar to R-38 with the same Rolls-Royce Merlin, but with a pressurized cockpit releasable in flight. This aircraft was in the course of assembly at the time of the German invasion. It was dismantled to be evacuated. Left at Tournai, Belgium, at the time of the rout, it was probably destroyed during the bombardment of this city.

Conclusion

The rejection by the Belgian authorities of the Renard fighter can be regarded as an questionable waste for at least two reasons:

(1) The airframes of these aircraft made use of already-existing components and their construction did not require any specialized tooling. This would allow a lowering of production costs and the possibility of building various components of the aircraft by unspecialized subcontractors. Moreover, this fighter could quickly be put in production.

(2) The urgency to re-equip the Belgian fighting forces led the military authorities to get "modern" aircraft from abroad, e.g. 20 Hurricane from Great Britain (with production license granted to the firm SABAC) and 34 biplane Fiat CR 42 Falco from Italy because of the delays in delivery of the Hurricanes. With a little perspicacity, perhaps it would have

been preferable for the Belgian taxpayers to have financed their own aeronautical industry.

Colors and Markings

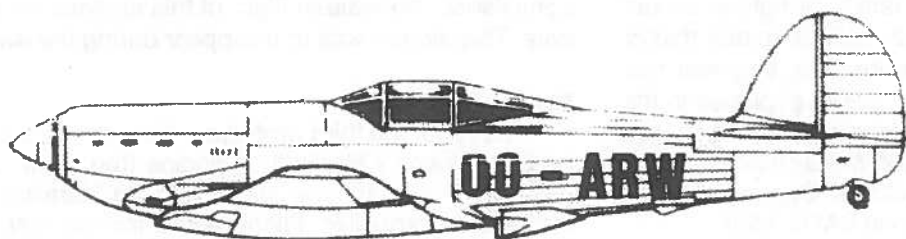
The three aircraft kept their silver liveries and civil registrations during the flying tests. The R-38 received Belgian roundels during its tests for the Belgian military authorities.

Sources

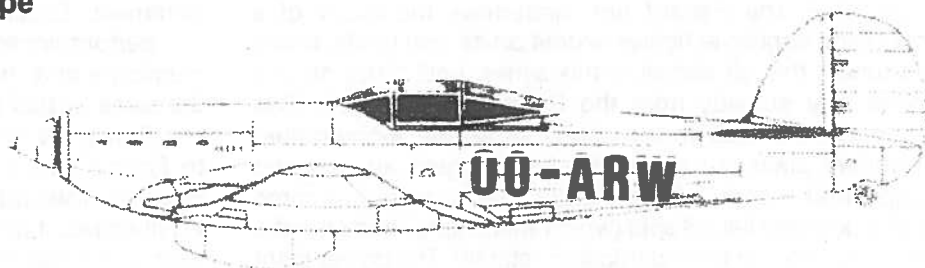
Les Avions RENARD 1922-1970 by Andre Hauet and Guy Roberty (the definitive book on the prolific career of this great aeronautical constructor).

Christian HOTTE (SAFCH #902), 6 impasse Santos-Dumont, F-44470, Carquefou, France.

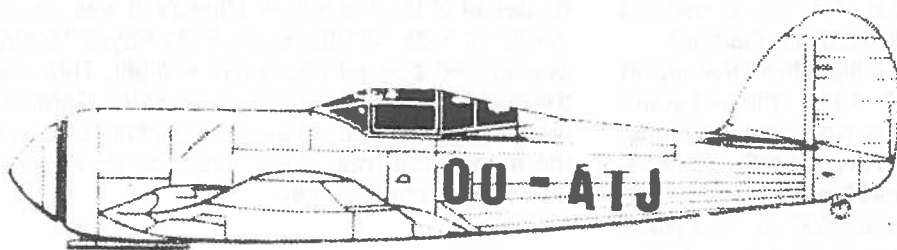
THE RENARD MONOPLANE FIGHTERS FAMILY



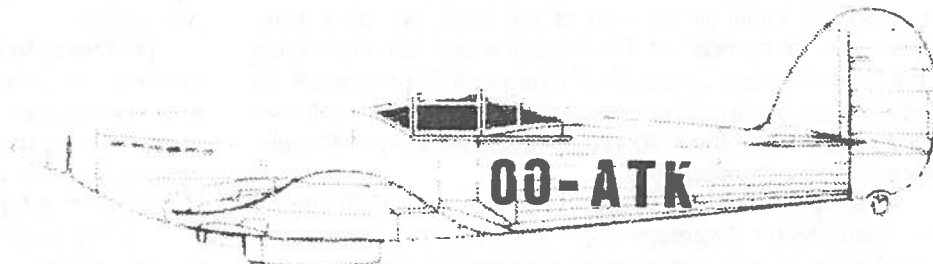
RENARD R-36 First Type



RENARD R-36 Second Type



RENARD R-37



RENARD R-38

1/72° Scale

A French Pilot in the Ottoman Army

Christian Hotte

[Author's note: In an old French magazine I recently found some interesting information about the participation of a French pilot in the Balkan Wars. The following article is a summary of information from the French magazine 'La Vie au Grand Air' from October 1912 to February 1913. I hope it will be a welcome addenda to the article by Cochrane and Layman that were published in SAFO #62 and 66.]

The French pilot, Leon Letort, enlisted on the Turkish side during the Balkan War. He was the holder of the Upper Military License #84, the first sapper aviator to have obtained this license, and during his military career he was to fly more than 15,000 km (9,375 miles). Letort left Paris on 12 October 1912 along with his mechanic Jean Lheritier, another aviator, Cailleau, a mechanic Cumont, and a Turkish lieutenant, Mithat, who has just obtained his military pilot's license in France.

On 15 October, they arrived in Constantinople and went to the Ministry of War, which Letort described as "a true palace of merchants, where Turkish coffee, cakes, and waxed shoes were sold, and everyone ran, bawled, and howled. I was somewhat taken aback by this lack of order. After having going from office to office from 9:00 AM to 7:00 PM, I finally ended up by drawing my wages. While returning to the hotel, I came upon a procession of Turkish reservists coming from Asia in their multicoloured and carnival-like costumes. They uttered mournful and wild cries."

The following day, the Frenchmen received their orders: Letort was sent to the Army of Vardar and Cailleau to Adrianople. At that time, Turkish aviation was no more advanced than that of its adversaries. Like them, it consisted of unusable aircraft sold at high prices. Letort continues: "There I found sheltered within two wooden hangars, in the middle of a vast plain, a two-seat Bleriot 70 hp in rather good state and four REP (French planes Robert Esnault-Peltre) two of which were in fly condition, two Deperdussins both very badly maintained and good only for scrapping, and two two-seat Bristol 70 hp which had never been flown. In another camp, there were two Arlan aircraft (German) under the command of a couple of Germans who never flew and who, at the time

of the battle of Tchataldja, hearing the shooting, set fire to their planes and ran away."

On returning to Constantinople, Letort bought a uniform of a Turkish Lieutenant for himself and one of a Second Lieutenant for his mechanic; they were the only Turkish mercenaries to wear uniforms. He also learned that he was assigned to a Turkish aviation unit based at Keupruluhad. To reach the front, he had to travel by railway nearly 800 kms (500 miles). There he found one Bleriot 70 hp and one REP of the same power. With regard to personnel, except for a Captain, the leader of the squadron, and a Lieutenant who flew the REP, no other warrant officers ever saw an airplane. The General in command was "lying down on a couch, among coffee and tea cups and boxes of cigarettes."

Letort performed several flights under fire from Greek troops, but, by climbing to 1800 meters (5900 feet), the bullets could not reach him.

At the beginning of November, the Turkish rout began. Since Letort and his mechanic did not have any means of evacuating their planes, they dismantled the essential parts of the engines and retreated to Salonika. At loose ends, the French pilots walked around the downtown where they were denounced as spies and led to the Greek authorities. By chance, they were turned over to Greek aviators who were interested in the spare parts. The Greeks proposed to the mercenaries that they either enlist in the Greek aviation or they would be treated as prisoners of war. However, escaping the vigilance of their guards, Letort and his companions embark onboard a French ship which took them to Marseilles.

The French mercenary pilots, returned to France safe and sound. Little did they know that they were the founders of a long line of adventurers of all nationalities who, driven by the lure of financial gain or by the spirit of adventure, would take part in all the major and minor conflicts of the 20th Century.

Christian Hotte (SAFCH #902), 6 impasse Santos Dumont, F-44470 Carquefou, France.

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Cast Resin Accessories. Cutting Edge Modelworks, PO Box 3956, Merrifield, VA 22116, USA. WWW.meteorprod.com.

The following accessories, cast in a dark-grey resin, are completely devoid of bubbles or other surface imperfections. The surface detail is sharp and intricate. The engineering is well thought out so that, with a few unavoidable exceptions, no detail will be lost in removing the parts from their "bench" (or whatever it is called in resin casting). Review samples provided by David Klaus of Cutting Edge Modelworks. The following items are all of similar quality so I will restrict my comments to specifics:

32-036 MiG-15/MiG-15bis/F-2/J-2 Wheels (for Trumpeter/Frog). \$7.99.

32-049 Israeli F-4E Refueling Probe. \$7.99.

32-052 Mig-15 Intake Splitter (For Trumpeter kit). \$9.99.

32-053 MiG-15/MiG-17 Ejection Seat (for Trumpeter kit) One seat. \$11.99.

32-054 Soviet ASP-3N/PBP-1B Gunsight for early jet fighters. \$4.99.

48-109 F6F Corrected Cowling (for the Hasegawa kit) with cooling flaps and deeply inset chin intakes. \$11.99.

48-184 B-25 Corrected Cowlings (Early) (for Accurate Miniatures kit) two cowlings without "bumps". \$14.99.

48-218 F-86 Seamless Exhaust. \$8.99.

48-250 F-104G/J Super Detailed Cockpit with Lockheed C-2 Seat (for Hasegawa kit) with film instruments. \$15.99.

48-251 F-104G Super Detailed Cockpit with Martin Baker GQ7 seat (for Hasegawa kit). \$15.99.

48-252 F-104C Super Detailed Cockpit (for Hasegawa kit) including ejection seat and film instruments. \$15.99.

48-253 F-104A Super Detailed Cockpit with Lockheed C-1 Ejection Seat (for Hasegawa kit) with film instruments. \$15.99.

48-254 Lockheed C-2 Ejection Seat with belts (for F-104/TF-105) Two seats. \$6.99.

48-255 Lockheed C-2 Ejection Seat without seat belts for F-104/TF-104. \$6.99.

48-256 Martin Baker CQ7 Ejection Seat with belts (for F-104/TF-104, F-5, etc.) Two seats. \$6.99.

48-257 Martin Baker CQ7 Ejection Seat without belts for F-104/TF-104, F-5, etc. Two seats. \$6.99.

72-016 F-86E (Late) & F-86F (Early) Slats for F-86E-10 thru F-86F-20 (fits Hasegawa & Academy kits). \$13.99.

Review samples provided by David Klaus of Cutting Edge Modelworks.

Sverkhzvukovoy bombardirovshchik Tu-22, by Nikolay Yakubovich. Armada #16.

This is the history of the Tupolev Tu-22 Blinder; photos, colour side-view drawings including Libyan and Iraqi, data, three-view drawings. Summary and captions in English.

The main text describes the Libyan dictator Ghaddafi's raids on Tanzania (one raid in the night 2930 March 1978, supporting Idi Amin), Chad (several bombings from October 1980 to at least 6 September, when one was shot down by a French Hawk missile), Sudan (in 1984 and in 1986 mixing into the Arab terror campaign against the south of the country). At least five were still in service in 1995; the first training was done in 1976 in the USSR. There is also mention on the Iraqi use of the type against Iran in the 1980 war. Iraqi crews trained on the type from the beginning of the 1970's. These export aircraft, provided at a time when the aircraft was out of production, were taken from Soviet first-line units with the technically best being selected.

Another interesting note (but with out Small Air Force interest) concerns Tu-22PD jammer aircraft in the Soviet war against Afghanistan. The jamming (covering Backfires) gave the Afghans ample warning against impending attacks, as even commercial TV programs would be jammed.

Kai Willadsen (SAFCH #863), Tunnelvej 24 2.tv, 2600 Glostrup, Denmark.

Aeroplani Caproni: Gianni Caproni and his Aircraft, 1910-1983. 245 pages, landscape, hardbound. (1992).

It's been a long time since I've reviewed a book with as many unknown (at least to me) aircraft as are illustrated in this English-language publication by the Caproni Museum. While primarily a photo book, each chapter begins with a couple of pages of text in excellent English and the photos are accompanied by extensive and informative captions. The photos are large, usually two to a page, but many filling a whole page, and their reproduction is absolutely superb even those nearly a hundred years old.

The book covers all aircraft designed and built by the Caproni company from pre-WWI to post-WWII. There are too many aircraft type illustrated to mention them all here; the appendix lists the specifications for the 150 types pictured in the book.

The chapters are: (1) "Gianni Caproni's Pioneering Years 1910-1914" 27 pages, 42 photos. (2) "Caproni Aircraft in World War One" 55 pages, 78 photos (one in color of the USAF Museum's Ca.36M). (3) "Postwar Prototypes 1918-1924" 17 pages, 26 photos. (4) "Seeking the Aerial Battleship" 11 pages, 16 photos. (5) "Light Biplanes" 15 pages, 26 photos (one in color of a Ca.100 floatplane still flying today). (6) "Rugged Utility Monoplanes" 21 pages, 38 photos (one in color of a Ca.133 on the Russian front). (7) "Experimental and Medial Aircraft" 13 pages 19 photos (one in color of Ca.133S on the African front). (8) "Caproni Aeronautica Bergamasca" 21 pages 38 photos (one in color of the Swedish AF Museum's Ca.313). (9) "The Caproni Galaxy 1919-1954" 19 pages 32 photos. (10) "Propeller to Jet 1945-1983" 9 pages 12 photos (6 in color). (11) "The Caproni Museum 1929-1992" 11 pages 16 photos (10 in color). (12) "Data and Performance of Pictured Aircraft" a 5-page table.

If there is anything in this book that will disappoint SAFO readers it is the relative scarcity of aircraft

in markings other than Italian. Those that do appear are: Ca.82 "Polonia" intended for a Ireland to US crossing with a Polish crew which never took place; Portuguese Ca.113; Chinese Ca.111 that was not delivered; Austrian Ca.133; Hungarian Ca.135bis; Yugoslav & Norwegian Ca.310; Swedish Ca.313; French Ca.164; and Swedish & Hungarian RE.2000. Not a bad selection, but it sure makes one wish for more information on Caproni export aircraft. [Ed. Anyone in Italy want to do a series of articles for SAFO on the subject of Italian export aircraft?]

The weird and wonderful aircraft that appear in this book are too numerous to describe (and you wouldn't believe the description unless you saw the photo), but I have to mention three of particular interest: (a) the relatively familiar Ca.60 with three sets of triplane wings arranged in tandem, (b) the series-built family of land-plane bombers that look more like flying boats with their boat-like fuselages, and (c) the totally-unknown Stipa-Caproni with a propeller turning inside a barrel-like fuselage (the ugly progenitor of the well-known Campani-Caproni CC.2 'jet').

There are, of course, many beautiful aircraft, such as the Ca.113 series of acrobatic biplanes, the 'Moth'-like Ca.100, the lovely Ca.309 Ghibli twin-engine light transport, and the very attractive C-22J jet-powered light plane.

Aeroplani Caproni is a wonderful book of photos that is guaranteed to please all lovers to beautiful and unusual aircraft.

"The G. Caproni Museum was founded in 1992. It exhibits a collection of historical aeroplanes and artifacts of world renown, these items were collected by the family of Gianni Caproni (1886-1857) who entrusted them into the care of the Autonomous Province of Trento. In the spring of 1999 the museum became a division of the Museo Tridentino di Scienze Naturali, and was renamed: Museo G. Caproni Aeronautica, Scienza e Innovazione.

"The exhibition hall contains 19 historical aeroplanes, 9 of which are the last examples existing in the world. Amongst the most important of these one can admire a Caproni CA 6 and a Caproni CA 9 built in 1911, a Caproni CA 100 seaplane from 1928 and an SM 79 built in 1934. As well as several hundred historical artifacts, the museum also exhibits a reconstruction of the design office of this famous aeronautical pioneer and part of the propeller workshop from the Caproni factory of the 1920's. A Lockheed F104 Starfighter marks the entrance to the museum." Address: via Lidorno 3, 38100 Trento. E-mail: caproni@mts.n.tn.it

McDonnell Douglas A-4Q Skyhawk, Serie Aeronaval #11. Jorge F. Nunez Padin. Laspiur 1801, 8000 Bahia Blanca, Argentina. E-mail: marauder@satlink.com.ar

The latest in the series of books from SAFCH-member Jorge Nunez continues the outstanding quality of its predecessors. Thirty-two pages printed on the highest quality glossy paper I've ever seen in any book present Spanish-language text, a one-page English summary, 29 b&w photos, 16 color photos, and two color side-view drawings. The photos are beautifully reproduced, especially the color photos which are all of half-page size and are of Kodak quality. The text follows the usual Serie Aeronaval style. Chapter 1: Historia (3 pages); Chapter 2: Operaciones en Malvinas (3 pages); Chapter 3: Tecnica (2 pages); Chapter 4:

Historias Individuales (3 pages).

The tractability of the Spanish text can be illustrated by the following individual history: "0660 A-4Q Skyhawk (msn 12229). Ex USN BuAer 144983. Recibido en 02.72 como 0660/3-A-207. Asignado a la 3º EscAer de Caza y Ataque como 0660/A-3-A-307. Aeronave configurada para operar con misiles AIM-9B y gondola fotografica. El 13.11.81 fue transferido al Arsenal Aeronaval nº 2 por fisuras en larguero intermedio del ala, disipiniendoes el cambio de als. El 07.04.82 se anulan los trbajos mencionados, ordenandose su inmediato, Derribado el 21.05.82 sobre el Estrecho de San Carlos en proximidades de Port Howard, piloto CC A. Philippe eyectado sobre el mar. TFT 4678.8 Hrs."

The Argentine Navy Skyhawks carried a variety of colorful scheme that will delight the modeler. Besides the well-known USN-like color scheme of Gris Claro (FS36440) over Blanco (FS37875) with broad blue/white/blue Argentine national flag on the rudder and black anchors on the wings, there is the green/brown camouflage used after the South Atlantic conflict, and a very attractive scheme of Gris Oscuro (FS26176) and Gris Claro (FS26307) whose low-visibility quality is seriously compromised by the usual bright blue/white/blue rudder stripes. While the first and last color schemes are illustrated with color side-view profiles, details of the green/brown scheme have to be determined from the photos (as must the markings carried on the top and bottom surfaces of all three schemes). A side-view drawing of the green/brown scheme and plan views of all schemes would have greatly increased the value of the book for the modeler. Also absent from this volume is the usual section of 'Markings and Color Schemes' which would have made up for the absence of the drawings mentioned above.

The English-language summary is a little too skimpy; there is a lot more information in the Spanish text than shows in this summary. The sale of this series outside of Latin America would be greatly enhanced if a complete English-language translation were provided. If this were done on inexpensive paper and provided as an insert, it would have an insignificant affect on the cost.

In spite of the limitation expressed above, this book is highly recommended to all lover of the Skyhawk and to all enthusiasts of Latin American aviation in general and Argentine naval aviation in particular.

[Ed. According to Jorge, the next releases in this series on Argentine naval aircraft are: #12 Dassault Super Etendard and #13 Convair PBV Catalina.]

Operation Marita: April 1941, Hitler attaque la Yougoslavie (1ere partie). Batailles Aeriennes #14. Sark Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. E-mail: lela.presse@wanadoo.fr This latest edition in Michael Ledet's series on the air campaigns of WWII follows the proven format of the previous volumes - except for one very welcome addition. But, more on that later. As with previous volumes, the text in in French but not impenetrable; the maps and tables are informative; the photographs are plentiful, unfamiliar, and well reproduced; and the color drawings are colorful and an excellent incentive to modelers wanting to add something unusual to their collections.

The chapters are: (1) "La Yougoslavie en 1942" 7 pages including 13 photos and 2 maps (one showing the subsequent operations in Greece which I sup-

pose will be the subject of the second part). (2) "L'Armee yougoslave" 6 pages including 10 photos and table of Army units on 6 April 1941. (3) "Ordre de bataille de la Luftwaffe" one page. (4) "Ordre de bataille de l'aviation yougoslave" 2 pages. (5) "Ordre de bataille de l'aviation italienne" one page. (6) "L'industrie aeronautique yougoslave" 3 pages including 7 photos (Potez 25, IK-2, PVT, & Breguet 19). (7) "Combats aeriens" 29 pages including 71 photos and 10 color side-view drawings (Luftwaffe Bf 109E-7 & 110C-4, Ju 88A-5, and Hs 126A; Italian Ju 87B-2 & Fiat G.50bis; and Yugoslav Breguet 19-8, SM 79, Bf 19E-3, & Hurricane). (8) "Aeronavale yougoslave" 6 pages including order of battle and 13 photos (Ikarus SM & IO; Dornier D, Wal, & 22Kj; He 8; DH-60 Moth; PVT-H; and SIM XII-H & XIV-H). (9) "Camouflages et marques" the 7-page section on camouflage and markings is a most welcome addition to this excellent series. Beside the 12 photos (Do Y, 17K, & 22K; Hurricane; BF 19E; Ca.310 & 311; Fizzir FN; Hanriot 32; and PVT-H) there are line drawings showing the camouflage and markings on the side, top, and bottom of two Yugoslav Bf 109E and three Me 108. (10) "Uniformes et Tenues de vol" 2 pages with 8 color drawings of uniforms worn by Yugoslav airmen. (11) "Maquette: L'IK-3 au 1/48" 3 pages including 5 photos of the model. The "Fiches monographiques" are each one page with a color side-view drawing and a small 3-view drawing: Ikarus IK-2; Bristol Blenheim Mk.I; Dornier Do-17; Ikarus IK-3 (2 pages with a 1/72-scale 5-view drawing); and SIM XIV. "Operation Marita" is another excellent book in the Batailles Aeriennes series and one that is a must for everyone interested in the Royal Yugoslav Air Force and any modeler thinking about adding some aircraft from this campaign to their collection of WWII aircraft.

Historia de la Aviacion Comercial en el Uruguay (Tomo Uno) by Juan Maruri. 415 pages (2000). This is the first of two volumes which will cover the history of commercial aviation in Uruguay and the River Plate. Both passenger airlines and cargo companies are covered. Readers of this first volume will find complete and accurate information plus photo coverage of the the pioneering efforts of Europeans and Americans to reach Montevideo and Buenos Aires and to make an air bridge between the River Plate capitals. They will also learn about the early history of one of the most long-lived airlines which survives to our day, the Uruguayan flag airline PLUNA. The story begins in 1919 when the first airline to fly in Uruguayan skies was the 'The River Plate Aviation Co.' established in Argentina by Major (RAF) Shirley George Kingsley. He began service between Buenos Aires and Montevideo in an Airco DH.4A in full RAF markings (serial F.2663) which was fitted with a 2-place passenger cabin. The French appear in Chapter 2 (Compania Franco-Argentina de Aviacion), Chapter 3 (Compania Rio Plate de Aviacion), Chapter 5 (Compania Generale d'Entreprises Aeronautiques, Lignes Aeriennes Latecoere, and Campagne Generale Aeropostale), and Chapter 6 (Air France). The Compania Rio Platense de Aviacion was formed by Major (RAF) Kingsley by the union of his first company with Franco-Argentina. The Germans are represented first by the Junkers F-13 of Mission Junkers (Chapter 4) and later by the 'Brazilian' airline Sindicato Condor (Chapter 10).

The Italian, Ernesto Colombo (ex-colonel in the Regia Aeronautica) founded the first Taxi Aereo in 1923 using a Savoia S.59bis flying boat. (This aircraft was a few months later the first aircraft of Paraguay naval aviation were it was named 'Chaco').

USA airlines are represented by NYRBA (Chapter 7), Panagra (Chapter 8), and Pan American Airways (Chapter 9).

The Uruguayan airline PLUNA (Primeras Lineas Uruguayas de Navegacion Aerea) is the subject of Chapters 11 to 19 covering the period from 1936 to 1977.

For the second volume, the author is planning to continue the history of PLUNA to the present and include the other foreign and national passenger and cargo airlines.

Anyone interested in this book can send an order to the address below. The price in Uruguayan bookshops is equivalent to US \$20 plus \$20 for air mail.

Eduardo Luzardo (SAFCH #1383), Picardia M.267 S.37, 91001 Barros Blancos, Uruguay.

Osterreichische Luftstreitkrafte 1928-1938, by Walter Schroeder. OFH Nachrichten; Sonderheft #24. A-4 size, 86 pages. Landscape. Softbound. OFH, Pfenninggeldf 18/2/14, A-1160 Wein, Austria.

This latest 'Special' from the Austrian Aviation Historians provides tables on four aspects of Austrian military aviation between the two World Wars: Personal, Flugzeuge, Flugunfalle, and Todesopfer.

(1) The first table (16 pages) lists the aviation personal commissioned between 1934-1938. Given are the date, rank, name, and subspecialty for 267 (with a few blanks) aviators. (2) A one-page table lists all military aircraft types used between 1928 and 1938 along with the country of origin and the number obtained by Austria. (3) The longest table in the book (52 pages) lists all the accidents, minor to fatal, by aircraft type alphabetically, beginning with the Avro 626 and ending with the Udet U 12S. The table gives the Dienstnummer, date, crew names, injury to crew, damage to aircraft, and a brief description of the accident. (4) The final table (one page) lists the 26 Austrian aviators who died in crashes giving their name, location and date of the crash, and the identity of the aircraft. The most tragic accident was that of Messerschmitt Me 108 #65, OE-TKA, on 5 October 1937 which killed four airmen.

These table are accompanied by 13 photos of aircraft; about half of which are of aircraft in crashed condition (Austrian Bent Wings?). The back cover has side-view drawings of 5 aircraft: Junkers A 35 & A 20; Fiat CR 32; De Havilland DH 84; and Breda 28. An extremely attractive aspect of the book is that each aircraft type in the chapter on crashed aircraft is illustrated by a side-view drawing (Avro 262 & 671; Brandenburg B I & C I; Breda Ba 28; Caproni Ca 100 & Ca 133; De Havilland DH 60M, DH 60G, DH 80A, & DH 82A; Falke RVa; Fiat A 120, A 120R, CR 20bis, CR 20bip, & CR 32bis; Focke Wulf 44, 56, & 58; Gotha 145B; Hopfner HS 8, HS 9, HS 9, HS 10, & HM 13; Junkers F 13; Messerschmitt 108; Phoenix L-2/c; Romeo Ro 37; Udet U 12a & U 12S). Each of these drawings shows the aircraft in Austrian markings with national insignia, codes, and Dienstnummer. Of particular interest are the drawings of the relatively unknown Hopfner aircraft; the HM 13 being a very attractive 2-seat biplane. (Ed. Let's hope that the

OFH will someday soon do a 'Sonderheft' on the Hopfner aircraft.)

Sonderheft #24 is an excellent addition to the information available on Austrian military aviation between the two World Wars and the modeler will find a lot of interesting markings and color scheme to apply as an alternative to well-known schemes of well-known aircraft. This book can be unreservedly recommended to anyone, historian or modeler, interested in the time period.

Feldpilot Rudolf Palm mit Chronik der Fliegerkompagnien 37 und 34, by Walter Schroeder. OFH Nachrichten; Sonderheft #25. A-4 size, 86 pages. Softbound. OFH, Pfenninggeldf 18/2/14, A-1160 Wein, Austria.

This book, written in German, is divided into five chapters: (1) Lebenslauf von Rudolf Palm (4 pages), (2) Rudolf Palm bei den Kuk LFT (10 pages), (3) Fliegerkompagnie 37 (40 pages), (4) Fliegerkompagnie 34 (26 pages), and (5) Beobachter die mit FP Palm flogen (5 pages).

Quite honestly, this reviewer finds the German-language text too extensive to allow him to give any reasonable critique of the text. Therefore, I will restrict my comments to the illustrative content of this book. The 9 photos are of mild interest and do not add much for this reviewer. The map of the 'Ostfront' did intrigue me; if I wasn't so lazy, with a little of research I should be able to find the modern names of such familiar cities as Przemyśl, Lemberg, Tarnopol, Sambor, Stryj, Stanislaw, Kolomea, and Czernowitz. The excellent side- and 3-view drawings transcend all difficulties with the language. Present are side-view drawings of a Fokker B.III & D.II; Phoenix C.I & D.I; and Brandenburg C.I (7) and a 3-view drawing of a Brandenburg C.I.

Sonderheft #25 is recommended only for the enthusiast with a command of the German language or with patience and a good German-English dictionary.

"Several months have passed since my last review of Uruguayan publications. The bad news is that the last issue of 'Aeronoticias' magazine was published in 1998. The good news is the promise of a book on Uruguayan naval aviation. The Uruguayan Navy has recently published a book about the ships of the Armada Nacional. This is to be followed by a book on uniforms, and then a third volume on the Aviacion Naval. This latter book, authored by respected historians, Alberto del Pino and Nelson Acosta, will be the first complete history of this service. Promised is a complete photo coverage from the first Cant 18 and 21 to the latest Jetstream Mk.2. As a special bonus to modelers, Pedro Otto Cerovaz (helped by his sons) is doing color profiles (and ten 3-view drawings) of all the aircraft used during the 75-year history of the naval service.

"Historian, 1st LT(R) Juan Maruri, is working on the third volume of his 'Historia de la Fuerza Aerea Uruguay'. This is the last volume in the series and will cover the years from 1967 to the present. He currently working on the year 1987, but progress is slow since he has many other parallel projects. For example, on 22 June, he published the first of two volumes on the history of commercial aviation in Uruguay. [Ed. Since some SAFO readers are undoubtedly interested in civil aviation, Eduardo's review of this book appears elsewhere in this department.]

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South African Colours and Markings (Vol.1, No.1) by Piet Van Schalkwyk and William Marshall. This very well-done magazine-format volume is the first of a new series. The thirty-seven pages contain articles on the Hawker Hurricane, Mirage F1AZ, and (for the trackheads) the Ratel Infantry Combat Vehicle. The articles are informative, and the color artwork is great.

I bought this for the Hurricane article, and was not disappointed. In a dozen pages, there are twenty profiles and many photos. The profiles range from pre-war to post-war. The Second World War aircraft cover the East African, Western Desert, and Italian campaigns, as well as OTU aircraft. There is a five-view drawing of a colorfully-marked aircraft from an Operational Training Unit, and several top and bottom views illustrating various schemes.

The Mirage F1AZ receives similar treatment, with early- and late-camouflage markings, an air-superiority scheme, and a colorful demonstrator depicted. Again, top and underside views are included. South African armor designs are interesting, and the Ratel ICV is given the same thorough treatment. The second issue will cover the P-40, Vampire, and Reconnaissance Cars.

To add to its appeal, the book is readily obtained in North America from Michigan Discount Models, 36623 Seven Mile Road, Livonia, MI 48152 (1 800 728-5054 or <http://www.discountmodels.com>). The cost is US \$20.00. To find out how to order from other areas, contact one of the authors: W.S. Marshall, PO Box 61564, Pierre van Ryneveld, 0045 South Africa. mechinf@netactive.co.za. P.J. van Schalkwyk, PO Box 14482, Lyttelton, 0140 South Africa. pietvs@netactive.co.za. Walt Noiseux (SAFCH #1574), PO Box 181, Syracuse, NY 13201, USA.

"I found **The Journal of Military Ordinance** in a hobby shop and was surprised by the excellent depth and range of coverage. Included in the two issues I now have, there are several articles that I think SAFO readers would find of interest. The July 2000 issue included a feature length article (and a number of photos) about the Rooivalk, the South African attack helicopter and several news column items about developments regarding air forces in Nigeria, Australia, the United Arab Emirates and in several former Soviet republics. Another article lists a number of non-US hobby and defense related magazines in the UK, France, Russia, Spain, Ireland, Pakistan and Israel. There are also several book reviews of interest, including a short review of Chris Dunning's 'Courage Alone: The Italian Air Force 1940-1943' (Hikoki, \$50.00). The May 2000 issue covers the Mid-Life Update of the Dutch F-16 fleet and includes a full page ad from Darlington Productions for books on the South African military, including 'Vlamgat', a history of the Mirage F1 in South African service. Single copies of the magazine are \$4.95 US and \$6.50 Canadian. Annual subscriptions, six issues, start at \$24.00 for US readers and there are various other rates for international subscribers. The magazine is published by Darlington Productions, Inc., PO Box 5884, Darlington, MD 21034, USA. Tel: (410) 457-5400. Fax: (410) 457-5480.

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"I have recently received the latest issue of the Finnish magazine, **Suomen Ilmailuhistoriallinen**

Lethi (The Finnish Aviation Historical Magazine) issue 3/2000. I must remind you that I do not read Finnish, but the magazine comes with a condensed English summary which I found very helpful. Of course, the photographs and drawings need no translation. Their editorial office is: InScale 72 Production, Makelankatu 5 B 10, 00550 Helsinki, Finland.

"This issue describes the changes made to the Fokker XXI, in the Spring of 1940, to modify this airplane with a Finnish designed retract system. In essence, the aim was to increase the XXI's performance by reducing the drag of its fixed gear. But flight testing showed that the performance improvement was minimal at best, and the program was dropped. Two airplanes were taken from the fighter inventory, and an engineering team was formed to design all of the changes necessary. For example the retraction machinery was designed, and the wing's structure was revised to fit the retracted gear assembly. The article goes into a very detailed report of all of the revisions required. In addition the flight tests are described, along with a summary of the results. The article covers seven pages, plus the cover. One page has an excellent four-view of the camouflage pattern and markings for this specific airplane and a superb five view drawing, complete with crosssections, shows the configuration in great detail. The article is illustrated with seven detailed photographs, including the cover.

"Next is the wartime history of another of the Finnish Aces, W/o Oiva Tuovainen. He started as a ground crew mechanic and worked his way into pilot training. His first combat was in the Gloster Gladiator, and he is credited with 4-1/2 victories in one day while flying the Gladiator! By the end of the war, his total score was 43 Soviet aircraft shot down, and by this time he was flying the Messerschmitt Bf-109G. This article covers three pages, which includes five photos.

"Then there is a two-page article on the 65 years of the Jami Soaring Center, which was the premier soaring area in Finland. It is illustrated with eight photos of which four are of gliders which were at the site. Then there is a one-page article with a photo of the French Caudron C60 trainer in Finnish service. The final article is a condensed list of operations in which Finnish He-115 float planes were used in commando operations. The article includes a photo of the He-115 in Finnish colors.

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Tom McGarry has sent along photocopies of two articles from the September 2000 issue of **Aviation History** to illustrate the potential usefulness of this magazine to SAFO readers.

The first article, "The Deadliest Puma", by Jon Guttman, describes "Battling Russian and American adversaries in a Messerschmitt Me-109, Dezso Szentgyorgyi became the Hungarian ace of aces." This seven-page article tells the story of this ace's WWII career and his subsequent trials in post-war Communist Hungary until his death when his Malev Il-18 crashed near Copenhagen, Denmark, in 1971. While the story of the Hungarian Air Force in WWII is relatively well-known, the telling of one man's experiences makes for interesting reading. The article is illustrated with 7 photos and a drawing of a Bf 109 in combat with a bunch of Soviet Il-2s.

The second article, "Forgotten Air War over Indochina", by Terry Gwynn-Jones, is a well-re-

searched account of the seldom-reported war between Thailand's air force and the Indochina-based squadrons of France's Armee de l'Air. The story is more extensive than the title indicates since the author gives a short history of the Thai air force up to the time of the conflict. (In addition a one-page 'side-bar' summarizes the role of Thai air force in WWII including their brief conflict with Japan on 8 December 1940, and its subsequent cooperation with the Japanese.) The author sets the air war into perspective by describing the action on the ground and on the sea. The war in the air is described in much greater detail than the here-to-fore best account know to this reviewer (Chris Shores' 'Bloody Shambles' Volume One, page 30). Of particular interest to this reviewer is the description of the activities of the Thai Mitsubishi Ki-30. "On January 7 (1941), 23 of the Thai's new Mitsubishi Ki.30 dive bombers struck at French targets in Cambodia. On another mission nine Ki.30s, escorted by a flight of three Hawk 75N fighters, were intercepted by a flight of M.S.406s." And, "The day (January 24) began with Martin 139 and Mitsubishi Ki.30 bombers, escorted by three Hawk 75Ns, raiding targets in Cambodia. Four M.S.406 fighters pounced on the leader of the Ki.30s, Wing Commander Khun Ron-naphakat, who had left the formation to take aerial photographs. Heading for home, Khun repeatedly skidded and turned his machine to avoid being hit during a succession of beam and head-on attacks. He later reported how the French pilots, out of ammunition, had finally pulled alongside his Ki.30, saluted and then peeled away and returned to base." (Here's a great idea for the modeler's 'Dog-fight Double' collection, and throw in a Thai Martin bomber and Hawk 75N for good measure. Note that this action took place before the adoption of the Thais adopted the "elephant" national insignia, so your Ann can be finished in Thai roundels.)

The article is illustrated by five photos, three of pre-war vintage (the Henri Farman that made the first airplane flight in Thailand on 31 January 1911, Air Marshal Phraya Chalermsak, and a Breguet 14 in 1922) and two of aircraft in the Royal Thai Air Force Museum (Corsair biplane mistakenly captioned as a Hawk 75N and a Curtiss Hawk III). Two very amateurish drawings showing the Thai Corsairs and Hawk IIIs mixing it up with French MS.406s on 28 November 1939 and Thai Hawk IIIs attacking Japanese Ki.30 Anns and Ki.27 Nates on 8 December 1941. (I sincerely hope these drawings were in color since they don't look very good on the b&w photocopies.)

Obviously, 'Aviation History' is a magazine that should be closely watched by SAFO readers. However, their articles can be considerably improved by a better choice of photos, a some discussion of markings and camouflage, and more attention to their art work. Until then, it can't pretend to compete with such magazines as *Insignia* from England and *Avions* and *Acro Journal* from France. (Notice the lack of any mention of comparable magazines from the USA?)

"The following is a review of the Uruguayan magazine *Gaceta de la Aviacion* (the official publication of the Academia de Historia Aeronautica del Uruguay) #26, September 2000: A 5-page article on the Uruguayan Aviacion Naval's 75th anniversary consists of a condensed history including equipment, organization, plans for the future, an inventory of aircraft in service [S-26 Tracker (1), Jetstream Mk.2 (2), Beechcraft B-200T (1), Wessex 60 (1), Wessex HC Mk.2 (5), Bell 47G (1), & T-34C

There is an article on the 100th anniversary of the famous French aviator Antoine de Saint-Exupery with details of the celebration in Uruguay. Also, an article on the historian Juan Maruri with an accounting of his numerous visits to our country (includes a photo of Late 28 'F-HJO' and Late 26 'F-AILZ' at Pando airdrome, both machines of the Aeroposta Argentina, a dependency of the French Comagnie Generale Aeropostale). A 7-page article on the famous American aviator James H. Doolittle in the South America. He visited Uruguay in 1926 and 1928 for the Curtiss Wright Export Division demonstrating the P-1 Hawk

There's a story of the long-range flights of our pioneer General Cesareo L. Berisso (friend of Gen. Doolittle) that includes a discussion of a flight from Montevideo to New York in an indigenous Uruguayan aircraft (ARME.2) which ended abruptly at the Ecuador-Colombia border after failure of the engine. A 3-page article by 1st LT A. Sosa Farias brings interesting information on the transfer of the last FAU AF T-34 Meteors (10 aircraft) to the FAB including 4 photos [FAB 904 nec FAU 678 (ex-USN 140694) and FAB 901 (ex-Spanish Ejercito del Aire 52-7671A)] and a table linking FAU-FAB serial numbers.

"Another article includes data on the new Aeromacchi SF.260EU (T-260 in the FAU) for the Escuela Militar de Aeronautica including c/n, date of manufacture, date of arrival at the EMA.

"Last is a note on the acquisition of an Embraer Brasilia for the FAU (date of arrival 15 July 99, c/n 120089, FAU 550). This is the only Brasilia in service in our country.

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Having become accustomed to the quality of MPM's short-run injection-molded 1/72-scale kits, their 1/48-scale L-39 came as somewhat of a pleasant surprise. Molded in dark grey plastic are three sprues of absolutely flash-free parts with exquisitely-engraved panel lines and a multitude of sharply-delineated small parts. The molding of this kit is on a par with the best in the world.

Construction of the major components is conventional with a one-piece lower surface of the wing to insure proper dihedral, and separate air intakes (difficult to clean up on the 1/72-scale KP kit, but probably easier to do in this scale). The horizontal tail is attached to the fuselage with a butt joint, so care will be needed here to get every thing correctly aligned. The landing gear doors are closed when the gear are down so there is no need for wheel-well detail. The landing gear is well detailed with 6 parts for each main gear and 5 parts for the nose wheel. The vacuform canopy is well molded and clear; two are provided in case you mess up one. Underwing fitting consist of two fuel tanks.

(FS23578, and sand (FS23717), and lower surfaces in grey (FS26496). (4) East Germany '151' in camouflaged upper surfaces of khaki (FS34088) and green (FS24552) and lower surfaces in grey (FS26496). The tips of the flying surfaces are yellow (FS23538).

The 10-page instruction booklet provides a drawing of the parts layout on the sprues, 7 exploded drawings showing the construction steps, a 4-view drawings showing the placement of the stencilling, and multi-view drawings for the color schemes for all four aircraft.

MPM should be congratulated on producing a world-class 1/48-scale kit that is a must for any modeler specializing in 1/48-scale aircraft and interested in adding a unique small-air-force aircraft to his/her collection.

MPM promises that a C version trainer and a gun-equipped ZA will soon follow.

PWS 33 Wyzel. 1/72-scale limited-run injection-molded kit. Broplan #MS-75. Janusz Brozek, ul. Pilotow 10G/33, 80-460 Gdansk, Poland.

The saying, "Good things come in small packages," is proven by this gem of a kit that is contained in a box (16 cm by 10 cm by 2 cm) little bigger than a pocket calculator. The PWS-33 Wyzel (Pointer) was a twin-engine trainer designed in 1936 intended to prepare student pilots to fly the sophisticated PZL P.38 Wilk, a twin-engine fighter of the type popular with air forces world-wide in the late 1930s. With a wing span of 9.26 m, a 1/72-scale kit of the Wyzel results in a model with a wing span of just under 13 cm (5 inch).

The Broplan kit consists of 33 parts well molded in light grey plastic with finely engraved panel lines and just a hint of flash. Some of the smaller parts are rather "chunky"; the landing-gear doors are best replaced with sheet plastic and the propellers are best replaced by something either from Aero-Club or from the spares box, but the other small parts should shape up after a little careful filing. The construction is conventional, starting with the 11-part cockpit interior with floor board, seats, instrument panels, and head rest. The wings are molded port and starboard, with a partial insert inboard on the bottom to preserve scale thickness at the tips. I would have preferred the wings to have been molded either as one piece or with full-span top and bottom surfaces because the joint between

the partial bottom surface and the main wing is very difficult to clean up. (Perhaps a single-piece wing would suffer too much shrinkage in the 'short-run' process and the two-piece wing would have to have too thick trailing edges, but the latter would be easier to correct than what is required with the partial insert.) Small tabs on at the wing root will help in obtaining the proper 0° dihedral. Fairing the nacelles into the wing may require a little finesse and care will be needed in aligning the twin tail empennage. The vacuform canopy is well molded but not as clear as one would hope for this prominent feature. Left as a challenge for the modelers is the externally-mounted ring sight.

Only two prototypes of the Wyzel were built, so selection of the color scheme is limited: The first prototype had the usual Polish air force color scheme of khaki (FS30118) upper surfaces and light blue (FS36329) under surfaces, but carried no national insignia. The second prototype carried the same colors, but with white rudders and Polish chessboard insignia in six positions. The decals sheets is, therefore, small consisting of only 6 tiny chessboards.

The instruction sheet is up to Broplan's usual high standard. Drawings of the sprues identifying all parts and exploded construction diagrams with special attentions given to the layout of the cockpit. Finally, an excellent 4-view drawing shows the color scheme, the placement of the markings, and the FS595 equivalents of the colors.

In spite of the limitations of short-run injection molded kits, Broplan has produced a satisfying kit of this beautiful twin-engine trainer. Straight from the box, it should make up into a model that will enhance any collection of WWII aircraft. With a little extra work, and placed next to a model of the P.38 Wilk (a Broplan vacuform kit), it will be a little gem that will attract attention on any competition table.

References: Jerzy Cynk's *Polish Aircraft 1893-1939*, has 4 excellent photos, but the best reference is #6 in the Polish *Wydawnictwo Militaria* series.] [Ed: The next kit from Broplan will be a 1/72-scale Caproni Ca 111 (on floats?). Look that one up in your library.]

Mil Mi-1M 1/72-scale injection-molded kit (A-Model Kit #7234). This is a short run moulding,

but with generally quite fine surface detail. The clear parts show that the moulds were polished with very coarse material before being put in production. Thus it is only fair that the instruction sheet warns that this limited edition kit is meant for experienced modelers only. And well, these modelers should be experienced in more than one way: All text in the instructions is in Russian [Ed. Ukrainian?] only.

The decal sheet is most impressive with no less than eight variants. The register is good, although not perfect. Color demarcations in some cases reveal the mesh size of the printing screen. Small Air Force versions include a Czech machine titles FILM and serialled 2008, a Polish AF machine serialled 1602, an Egyptian AF machine, and Finnish Air Force's HK-3 (which actually is a Polish-built SM-1W). Except for the Egyptian machine in an overall sand color, all three have dark green upper surfaces (for the Polish one, Marine Green Humbrol 105 is suggested) and light blue undersurfaces.

A-Model have found a novel way of ensuring that the Finnish roundel's blue ring and the outer edge ring are centered: Both are in blue! Given the fact that the an outer edge is actually black, this is not the way to solve this problem. Anyway, as the Mi-1's roundels were applied on a fairly dark surface, there should be no outer edge at all.

The HK of the serial seems correct in style; however, the 3 is not, as the upper part of the digit should be square-edged, not round as the lower part. The tail rotor warning VARO POTKURIA!, which is to be applied on an orange background, is very nicely printed in white; however, the only photos I have seen so far of the Finnish Mi-1M show dark (black?) text VARO MOOTTORIA. There is obviously some research to be done next time I get close to the Finnish Aviation Museum.

As to the Polish version, I have certain reservations concerning the tail rotor warning UWAGA SMIGLO; this already has two diacritical signs missing on the letters, indicating that photos were probably not very closely studied during preparation of this sheet.

Kai Willadsen (SAFCH #863), Sankt Jørgens Gade 16, 4200 Slagelse, Denmark.

Piper Cherokee Arrow 2 1/72-scale injection-molded kit (Airfix Series 0, #00060). This is a reissued kit with improved decal sheet. The new sheet adds an extremely interesting version, namely the Finnish Air Force's PA-2 (which seems at the period depicted to have belonged to Satakunnan Lennosto in Tampere). The decal sheet printing is sharp. Regrettably the roundels' centering is a little off in my copy; this, however, does little damage, as the blue color used is a little too pale requiring decals to be searched out anyway to get the model correct. Worse still is that the bad register also applies to the first aid markings (red cross on white circle) and the white stripe up the tail fin, which makes it quite difficult to get a good result.

The accuracy of the markings is regrettably quite varied, although the size of roundels, serials etc. seems correct. The symbol marking the location of the first aid pack should, in fact, be a green cross on white background. The black eagle marking should have a white head. The aircraft type name "Cherokee ARROW" is missing. The lines on the serial PA-2 are too thick, spoiling the otherwise quite correct style of the letters. The black roundel edging is also on the thick side. Please also note that the windshield framing is white - the box art could mislead one to believe that it is black. See the excellent color photo of PA-2 in Jan Jørgensen: Vingar för Norden page 53.

Alternatively one may build a British (G-BAAP)

or a US (N7696J) civilian version from the kit (but why should one?) - these versions were included in the original 1974 issue of the kit. The same too-pale blue from the Finnish roundels is used for stripes and letters (and the Union Jack of the British version). This is sloppiness and over-economizing by the manufacturer. Similarly the US registration is blue on the decal sheet and red in the painting instructions. What should one believe?

The kit includes a pilot figure, a nice man in jacket, tie, and cap; certainly commendable. Regrettably, he has suffered from malnutrition; as an example the shoes are only about three quarters of what should be expected for ca. size 43-44 (size 9). Thus we still miss a proper impression of how small such light aircraft really are.

The surface detailing is nice with lightly raised panel lines. The wing trailing edges are nice without being razor sharp. Ailerons, tailplane and rudder are equipped with strengthening ribs. They seem to be present in the correct number and shape, but done a little coarsely. There is very little flash and mould marks. The placement of the moulding-tool ejection marks are well thought out.

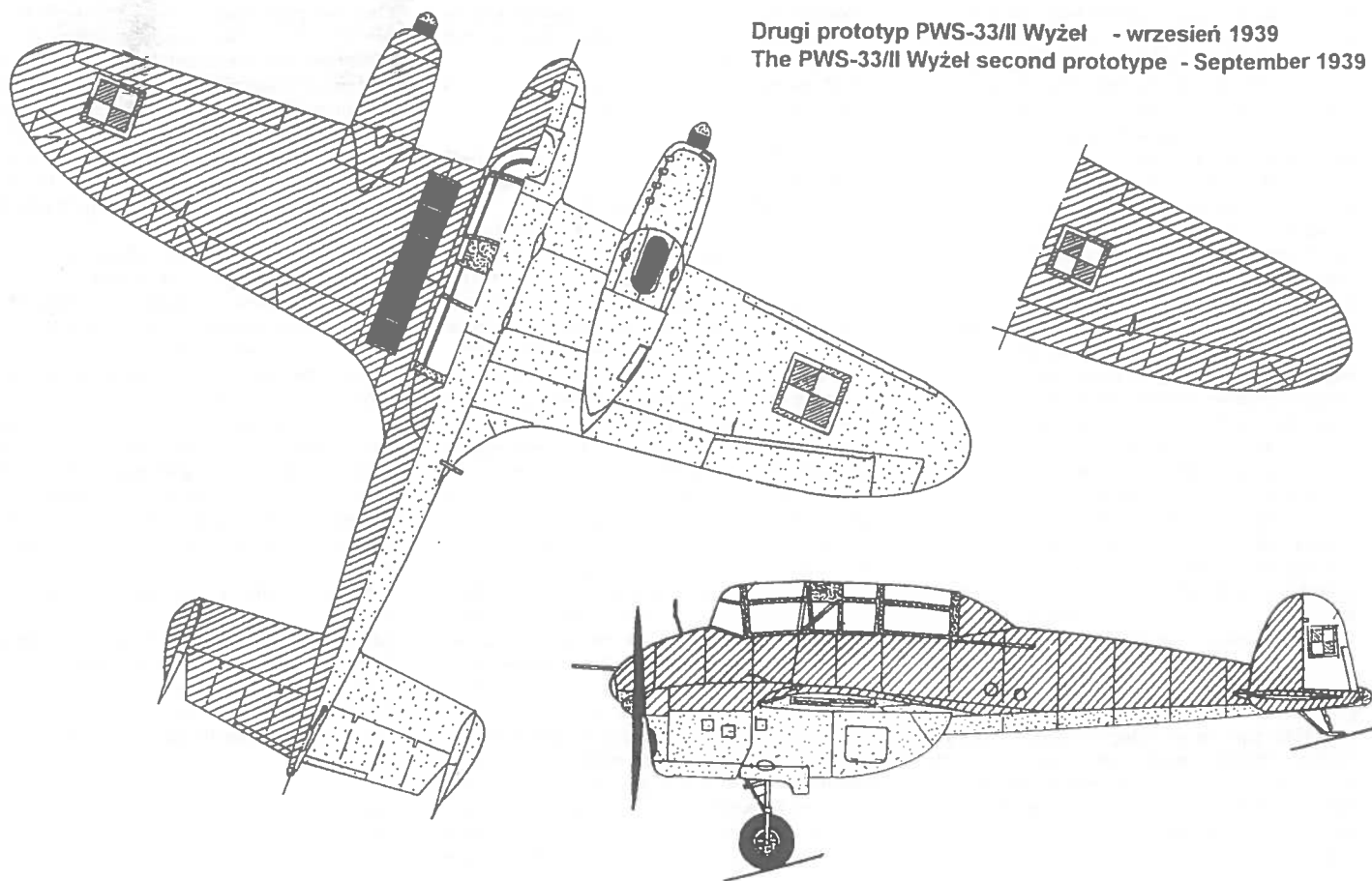
In Mallari Special #1, Kyösti Partonen, on page 20, concludes that the (original issue) kit is basically correct in size and shape. One should, however, be aware that PA-1 to PA-4 had rounded corners on the side windows, where the kit represents a version with sharp corners. Also check the wing tips and revise the profile, see photos.

All in all a nice kit which Airfix does not have to be ashamed of reissuing, particularly in an improved version such as here.

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Drugi prototyp PWS-33/II Wyżel - wrzesień 1939

The PWS-33/II Wyżel second prototype - September 1939



Cutting Edge Decals, PO Box 3956, Merrifield, VA 22116, USA. Web site: www.meteorprod.com. Twelve new 1/48-scale Cutting Edge Decal sheets have been received from Meteor Productions. Since these are identical in size and quality, a review of their common attributes will be followed a description of the aircraft covered by each. Each sheet, measuring 13.5 cm by 20 cm, is sharply printed in dense colors in perfect register. Items where registration is especially critical, such as outlined letters, are printed separately. All codes, serial numbers, and special insignia are provided and national insignia (including swastikas were appropriate) are included to make all aircraft. The full-color instruction sheet provides side-view drawings of all aircraft and representative top and bottom plan-view drawings. A separate sheet provides notes specific to each aircraft, and bibliography, and cross reference to FS95 colors.

CED48-103 Messerschmitt Me 262. Four Luftwaffe Me 262: White '19'; white 'F'; white 'B'; and red 'B'.

CED48-104 Focke-Wulf Fw 190A. Four Luftwaffe Fw 190A: one with red fuselage band and black/white striped cowl; black '7'; black '1'; and black '15'.

CED48-107 F-84 Thunderjet. Three USAF F-84E/G: 'FS-466' with yellow/black trim and "Ricepaddy Ranger" 'nose' art; 'FS-111-B' with blue trim and "Five Aces" 'nose' art; and 'FS-139-A' with red trim Mig 'victory' symbol.

CED48-111 F8F Bearcat. Two USN Bearcats: white '100' coded 'B' with red/white trim 'Air Group Nineteen' and white '03' coded 'XB' in Naval Ordinance Test Station colors of sea blue fuselage and yellow and red wings and vertical tail. Stenciling and instruction provided.

CED48-112 F8F Bearcat. Two USN F8F: white '101' coded 'C' with VF-17 "Jolly Rodgers" squadron insignia and white '3F4' codes '4' with VF-3 "Felix the Cat" squadron insignia. Two Bearcats with the French AF's CG 1/9 Limousin in Vietnam: 'E' with GC 1/9 "Fox" insignia and 'T' with "Eagle" in red triangle insignia. Stenciling and instruction provided.

CED48-116 B-26B Marauder. Three B-26B: 'ER-X' 131765 of the 450 BS with "Fightin' Cock" nose art; '71-B' 295864 of the 497 BS with "Valkyrie" pin-up nose art; and 'DR-H' 118054 of the 452 BS with "Jezabelle" nose art.

CED48-120 F4F Wildcat. Four USMC Wildcats on Guadalcanal: white '77' of LT Jim Sweet with 7 victory flags and "Earthquake McGoon" tail art; white '2' of CAPT Marion Carl with 19 victory flags; black '8' with indian head insignia and painted-over outline to the national insignia (obscuring a "Torch" yellow ring?); and black '53' of CAPT Joe Foss.

CED48-122 Mosquito. Four 418 Squadron RCAF FB.VI & NF.11: red 'TH-U' with "Moonbeam Mc-

Swine" nose art; red 'TH-F' with "Cousin Jake" nose art 30 1/2 victory swastikas; red 'TH-M' with "Black Rufe" nose art and 17 victory swastikas; and red 'TH-J' with "City of Edmonton" crest and 24 1/2 victory swastikas.

CED48-130 Do 335 Arrow Part 1. Three Luftwaffe: Do 335 M11 'CP-UL', Do 335 V3 'ZH', & Do 335 A-0 'VG-PH'; one RAF Do 335 A-1 mostly bare metal; and Do 335 A-0 with 'VG-PH' over painted with US insignia.

CED48-131 Do 335 Arrow Part 2. Three Luftwaffe: Do 335 A-03, Do 335 A-12, & Do 335 A-07; French Do 335 M-14; and Do 335 A-13 with Luftwaffe marking overpainted with US insignia.

CED48-132 Do 335 Arrow Part 3. Four Luftwaffe: Do 335 V9 'CP-UI', bare metal Do 335 A-12 '119', Do 335 A-03 '105', and Do 335 A-12 '114' and RAF Do 335A-12.

HDL Ili-Decals, Kilinskiego 22, 40-062 Katowice, Poland. Hi-Decal Line has come out with four new decal sheet for the Mig-29: Two for the single-seat Fulcrum A (one in 1/48 scale and one in 1/72 scale) and two for the two-seat Fulcrum B (one in 1/48 scale and one in 1/72 scale). Since these sheets are identical except for the scale, I will review the 1/48-scale sheets in detail and then just mention the 1/72-scale sheets.

48-13 Mig-29 A/B/G Fulcrum A. This large sheet (13 cm by 17.5 cm) is produced in the usual outstanding quality we have come to associate with the name HDL. The printing is sharp and in perfect register, the colors are dense and vibrant, and the instructions are clear and informative. This sheet contains the national insignia, serial numbers and codes, and individual markings for seven single seat Fulcrums: (1) Mig-29A of the 1st Fighter Regiment "Warszawa", Polish AF, Minsk Mazowiecki AB, 1999. Red '66' in dark grey (FS36118) and medium grey (FS36270) over ghost grey (FS375) and carrying the Warszawa Siren insignia; (2) Mig-29A, 1st Fighter Regiment, "Warszawa", Polish AF, during "Eagle's Talon '97" Polish-American exercise, September 1997. Red '89' dark brown (FS30045), tan (FS30227), medium green (FS34226), and dark green (FS34079) over pale blue grey (FS36495). The Czech insignia are over painted in black green (FS34052) on top surfaces and light blue (FS35414) on lower surfaces. Tiger stripes are carried near the tip of the vertical tail. (3) Mig-29B, 127 Sqn. "Knights", 204 Fighter regiment, Yugoslav AF, Batanjica AB, 1997. Overall light grey (FS26493) with grey green (FS25352) camouflage on upper surfaces. This a/c carries the most recent Yugoslav roundels with blue/white/red stripes. (4) Mig-29B, 231 Fighter Squadron, "Playa Giron" Guard Brigade, Cuban Revolutionary AF, San Julian AB, 1997. This aircraft is finished the same as the Yugoslav a/c. (5) Mig-29B, 28 Squadron, "The First Supersonics", Indian AF, Poona AB, 1991. A/c

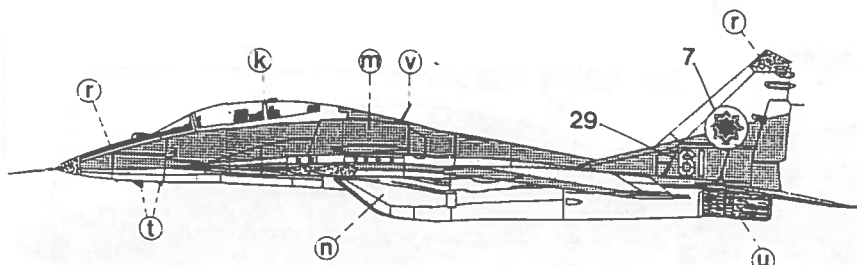
'KB720' is overall light grey with grey green camouflage on upper surfaces and large red triangles on all flying surfaces and the squadron insignia on the air intakes. (6) Mig-29B, Islamic Republic of Iran AF, 1998. A/c '3-6115' is overall light grey with pale stone (FS35351) camouflage on upper surfaces. IRIAF and the Arabic equivalent of the serial numbers are carried on the nose. (7) Mig-29G, 1 Squadron, 73 Fighter Wing, "Steinhof", German AF, Laage AB, Autumn 1997. A/c '29-06' is blue grey (FS35237) and compass grey (FS36375) on the upper surfaces and ghost grey (FS36270) on the lower surfaces.

The instruction sheet is a model of clarity and information. All aircraft are illustrated with port and starboard views (with even the inside surfaces of the twin fins shown) and top and bottom plan views. There is no need to guess about the color scheme or the placement of the decals. All colors are designed by FS95 numbers and Humbrol and Model Master colors. There are even sketches showing what modifications are needed for what aircraft.


72-044 Mig-29 A/B/G. This sheet is identical to 48-013 except for size (9 cm by 12.5 cm).

48-015 Mig-29 UB Fulcrum B. This sheet is the same size and quality as the one described above. The a/c covered are: (1) 1 Fighter Regiment "Warszawa", Polish AF, Minsk Mazowiecki AB, 1997. Red '28' is finished in the same color scheme as the second Mig described above. (2) 3 Fighter Squadron, 2 Training Wing, Crimea Air Defence Division, Ukrainian AF, Kirovskye AB, 1995. Blue '61' is olive green (FS34151), light brown (FS30219), and brown (FS30117) over pale grey (FS36495). (3) Moldavian AF, Kishinev, 1997. White '61' is finish in a demonstration scheme of pale blue (FS2550) and dark blue (FS25050) over light grey (FS26493). (4) 120 Fighter Regiment, Russian AF, Domna AB, Siberia, 1996. White '77' is overall light grey (FS26493) with grey green (FS25352) camouflage on upper surfaces. (5) 57 Air Group, Romanian AF, "Mihail Kogalniceana" AB, Constanta, 1998. Red '15' is overall light grey (FS26493) with grey green (FS25352) camouflage on the upper surfaces. (6) 3 Fighter Wing "Wladimir Komarow", 1 Air Defence Division, East German AF, Preschen AB, 1989. The color scheme for black '179' is the same as for the Romanian a/c above. (7) 611 Squadron, 5 Air Group, Peruvian AF, BA "Captain Jose Abelardo Quinones Gonzales", Chiclayo, 1997. A/c '046' is overall pale grey (FS36495) with grey green (FS25352) camouflage on the upper surfaces.

72-045 Mig-29 UB. This sheet is identical to 48-015 except for size (9 cm by 12.5 cm).

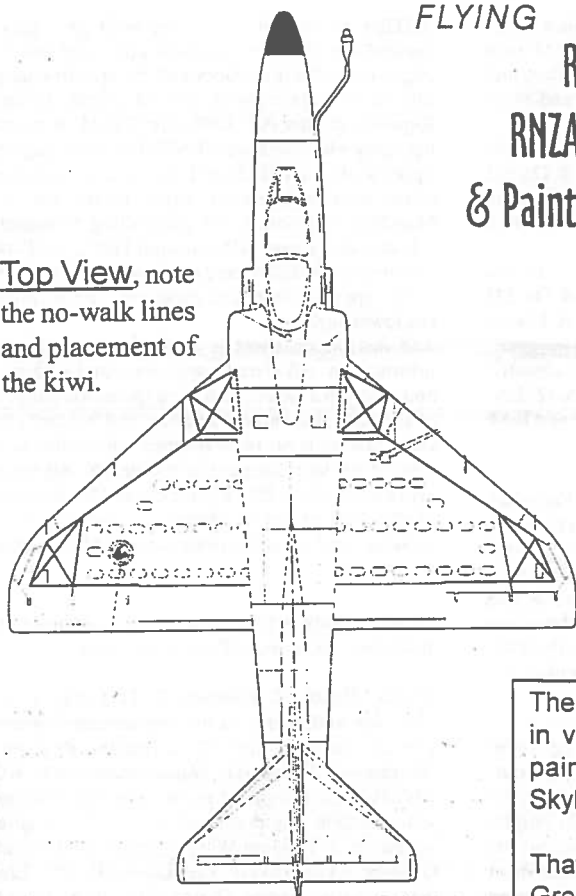


MiG-29UB, Moldavian A.F.; Kishinev, 1997.

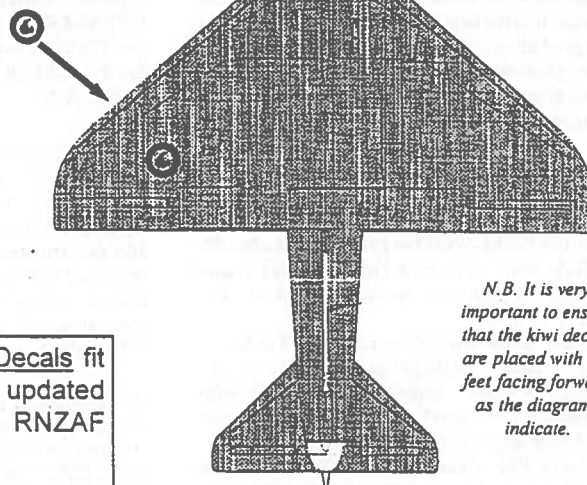
FLYING KIWIS... 

Replication of the RNZAF Skyhawk Markings & Paint Scheme in 1/72nd scale

Top View, note
the no-walk lines
and placement of
the kiwi.



Underneath

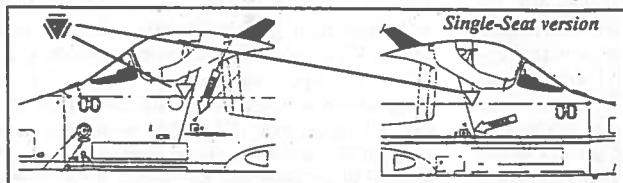


*N.B. It is very
important to ensure
that the kiwi decals
are placed with the
feet facing forward
as the diagrams
indicate.*

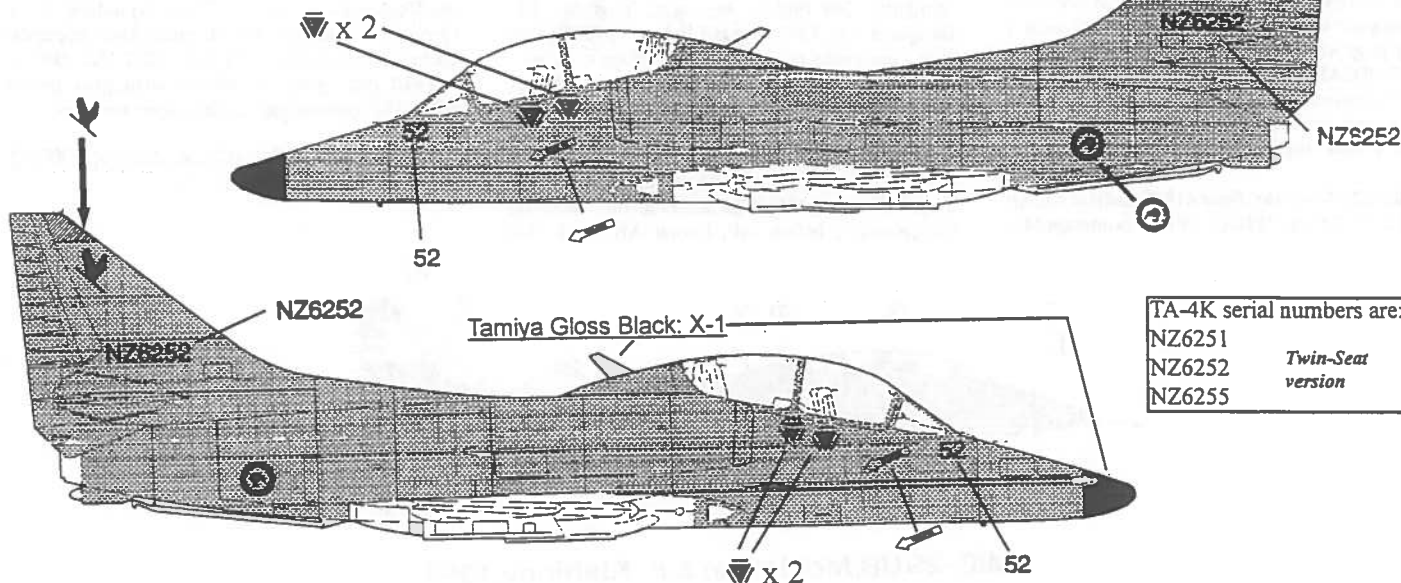
The Updated Lo-Viz Decals fit
in very well with the updated
paint scheme of the RNZAF
Skyhawk.

That scheme is an all over Dark
Green, Tamiya colour XF-61.
The only colour variation is the
Gloss Black (Tamiya X-1) of the
nose and aerial (as indicated).

Trevor Bringans Ltd., P.O. Box 76-156, Manukau City,
New Zealand.
Decals by Zanchetti of Italy



A4-K serial numbers are:
NZ6201 Placement of serial
number on rear of main
NZ6202 body is the same as
NZ6203 Twin-seat version.



TA-4K serial numbers are:
NZ6251
NZ6252 *Twin-Seat*
NZ6255 *version*

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"I finished digesting SAFO #94 for July 2000, and wanted to send along a few comments: Tony Sapienza's article on the little-known Neiva T-25 Universals in service with the FAP was most welcome. In comparing his data with what I have on the Chilean use of the aircraft, however, several inconsistencies seem to appear. I honestly do not know if this is because of errors in my older data or what, but wanted to send it along for possible reader-input and correction. First of all, I have the Manufacturer's serial numbers (msn or, if you prefer, constructor's numbers, c/n) for the ten Chilean Army T-25s delivered circa July 1975 as 1132 to 1141 (note the additional digit in front of the serial style that Tony reported). Further, this made Chilean Army serial 101 msn 1132 [not (1)133 that Tony reported]. Further, msn 1135, Chilean Army 104 (but also given, for some reason as 204) was reported written off 16 July 1976, which would seem to make it difficult to have gone to the FACH and on to Paraguay, if correct. Has anyone actually acquired definitive information on these aircraft that went to Chile? The Chilean Air Force magazine for January-March 1980 pp205 had a drawing of an FACH T-25 marked as '204' - which seems to suggest that the FACH must have either (a) modified the Army serials after the transfer or (b) used another series of serials besides the 251-260 series always assumed. 'Latin American Weekly' for 20 April 1984 muddled the waters for a lot of people when it reported that 'The Chilean Air Force has voted with its wings against the Brazilian trainer plane, the Neiva T-25. The Army's air command originally bought 10 of these, but in 1979 it donated five to the Chilean Air Force and sold the other five to the Paraguayan Air Force. Now the Air Force has sold the other five to the Paraguayans, presumably at knock-down prices.' It

would be interesting to know the source for this rather odd report.

"Marcos Vinicius G. Teixeira's article on the Uruguayan Navy F6F-5s was also most welcome, as a lot of misinformation has also been circulating around these aircraft for many years. Although the match-ups are not known with any certainty, it may be of some interest to readers to know what aircraft were involved. The known former US Navy BuA numbers were BuA 40151, 42071, 58797, 58877, 70768, 71540, 71128 (confirmed as A-451), 71622, 43065 (confirmed as A-453), 71740 and two others not identified. It is worth noting that the Uruguayan Embassy request to the U.S. State Department for permission to overfly US was dated 7 November 1950, some 17 months before the actual delivery flight, and the serials given were A-401 to A-406 and A-451 to A-455. It is almost 100% certain that at least some of these aircraft had US civil registrations briefly prior to overhaul by Cobell Industries.

"Wanted to also pass along the news that I have contracted with Hikoki Publications in the UK to produce a book next year with the working title 'Air Wars Latin America: The First 70 Years'. Howell Press of Charlottesville, VA will be publishing 'ARRIBA! A Latin American Aviation History Primer', covering the first 100 years of manned flight in Latin America, which I am preparing under a partial grant from the Smithsonian's Latino Initiatives Committee. The 'Journal of the American Aviation Historical Society' published my story entitled 'Deal of the Decade', surrounding Ecuador's acquisition of Seversky's and a Bellanca aircraft, in their Fall 2000 issue, in case anyone is interested.

"Finally, if anyone knows of a publisher that would be interested in taking a completed history of the

North American B-25 Mitchell in Latin American service, I'd be happy to know of it. The rather large manuscript was originally prepared for 'World Air Power Journal', at their request, but I guess everyone has learned about that publication by now. It is book length, and ready to go."

Dan Hagedorn (SAFCH #394), 13125 Pennerview Lane, Fairfax, VA 22033 USA. E-mail: r1rx1hp1@bellatlantic.net

"I was checking out the FS595 numbers for the camouflage schemes on the North Korean MiG-15's shown on page 23 for SAFO #93. Page 29 lists the colors corresponding to the aforementioned MiGs: Red '546' is said to be camouflaged with brown FS24098. This is FS color is reality a green color nearly like FS34127 of Model Masters Colors. The correct color is either brown of a different FS number or green. Which is correct?"

Thomas Perry (SAFCH #156), Box 1711, Hillsville, VA 24343, USA.

"I went to this year's Rose Festival Air Show and was surprised to see a Chinesebuilt CJ6A (mfg. sn 3632013) on display. The Cambodian markings caught my eye and I thought SAFO readers might appreciate seeing a photo. The a/c was built in 1973 and according to Landings.com, is registered to Eugene J. Vandeputte, Haines, AK. It may have been in Portland, Oregon, through a connection with Fred Ihenburg's 'Yakity Yaks' at the Aurora (Oregon) Airport, just south of Portland. (Photo on page 143)

Thomas Wm. McGarry (SAFCH #950), 21 Davinci St., Lake Oswego, OR 97035-1309, USA. Tele/Fax: (503) 534-0899. Email: twmflak@teleport.com

-web-

"When I was playing around with my computer, I ran across quite a few web sites for small air forces. Enclosed is a list of some that I have found. I am sure that there are more out there."

Royal Australian Air Force: www.gil.com.au

Brazilian Air Force: www.mat.ufmg.br/~rudnei/fab/english.html

Canadian Air Force: www.achq.dnd.ca

Chilean Air Force: www.geocities.com/~eahumana/index.html

Croatian Air Force: www.geocities.com/photoemil/militaria.html

Finnish Air Force: www.hkkk.fi/~yrjola/war/faf/faf.html

Hellenic Air Force: www.hellas.org/military/air_force/

Israeli Air Force: www.jdf.il

www.v.netlink.co.uk/users/acroft/waf/israel/iafin

JASDF (Japan): www.jda.go.jp/jasdf/index.html

Singapore Air Force: www.mindef.gov.sg/rsaf

Slovakian Air Force: www2.arnes.si/~ssdsvid/indexe.html

South African Air Force: www.geocities.com/capecanaveral/lab/2789/s

Vietnamese Air Force: www.vnaefcom

Latin American Aviation Historical Society: www.laahs.com

Terry Love (SAFCH #229) 9415 West 178 St., Lakeville, MN 55044, USA.

Mario Bartoli, SAFCH member and our Web Master, has opened a Web-based hobby shop that carries many of the items reviewed in SAFO. For example, GAL Decals for L18.000 and the enjection-molded 1/72-scale Praga E.39 for L30.000. Prices are in Italian Lira and members living in non-EEC countries should divide prices by 1.2. This, plus the current exchange rate of about 0.000448 US dollars per Lira, makes the prices very competitive. And, payment can be made by VISA. Check out his Web Page at www.mondoridotto.it

-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-

"I am seeking information on the use of the Tu-4 'Bull' by the PLAAF. Any information regarding unit markings and/or operational histories would be greatly appreciated. I am specifically interested in the period of 1954-1960."

Charles Euripides (SAFCH #1286), 4508 Willow

Croft Court, Charlotte, NC 28226, USA. E-mail: geuripides@yahoo.com

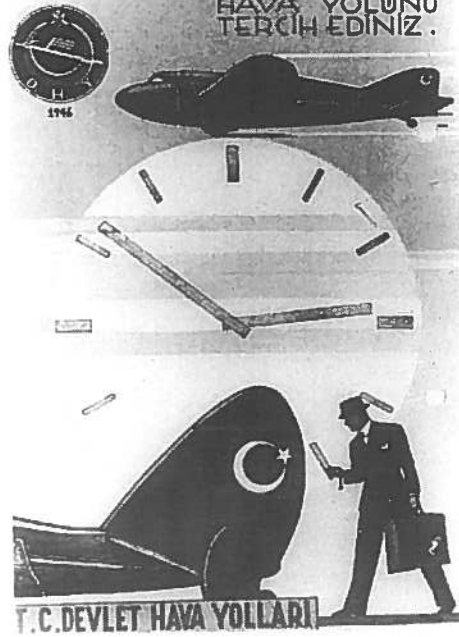
"Selling Magazines: IPMS Canada, UK, USA, Chapter Pubs; AAHS Journal; Aero N'Photo; Aerophile; Air & Space; Air International;

Aircraft Illustrated; Airline Quarterly; Captain's Log; Modelworld; Flight International; Modelers Journal; plus many more. Send SASE."

Joe Daileida (SAFCH #28), 4314 W 238th St., Torrance, CA 90505, USA.



VAKIT NAKİTTİR!
HAVA YOLUNU
TERCİH EDİNİZ.



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